

92/711

c

1711  
C



















Regional Oral History Office  
The Bancroft Library

University of California  
Berkeley, California

Western Mining in the Twentieth Century Oral History Series

James T. Curry, Sr.

METALLURGIST FOR EMPIRE STAR MINE AND NEWMONT EXPLORATION, 1932-1955;

PLANT MANAGER FOR CALAVERAS CEMENT COMPANY, 1956-1975

With an Introduction by  
Grant W. Metzger

Interviews Conducted by  
Eleanor Swent  
in 1989 and 1990

Since 1954 the Regional Oral History Office has been interviewing leading participants in or well-placed witnesses to major events in the development of Northern California, the West, and the Nation. Oral history is a modern research technique involving an interviewee and an informed interviewer in spontaneous conversation. The taped record is transcribed, lightly edited for continuity and clarity, and reviewed by the interviewee. The resulting manuscript is typed in final form, indexed, bound with photographs and illustrative materials, and placed in The Bancroft Library at the University of California, Berkeley, and other research collections for scholarly use. Because it is primary material, oral history is not intended to present the final, verified, or complete narrative of events. It is a spoken account, offered by the interviewee in response to questioning, and as such it is reflective, partisan, deeply involved, and irreplaceable.

\*\*\*\*\*

All uses of this manuscript are covered by a legal agreement between The Regents of the University of California and James T. Curry, Sr. dated 24 October 1989. The manuscript is thereby made available for research purposes. All literary rights in the manuscript, including the right to publish, are reserved to The Bancroft Library of the University of California, Berkeley. No part of the manuscript may be quoted for publication without the written permission of the Director of The Bancroft Library of the University of California, Berkeley.

Requests for permission to quote for publication should be addressed to the Regional Oral History Office, 486 Library, University of California, Berkeley 94720, and should include identification of the specific passages to be quoted, anticipated use of the passages, and identification of the user. The legal agreement with James T. Curry, Sr. requires that he be notified of the request and allowed thirty days in which to respond.

It is recommended that this oral history be cited as follows:

James T. Curry, Sr., "Metallurgist for Empire Star Mine and Newmont Exploration, 1932-1955; Plant Manager for Calaveras Cement Company, 1956-1975," an oral history conducted in 1989 and 1990 by Eleanor Swent, Regional Oral History Office, The Bancroft Library, University of California, Berkeley, 1990.

Copy no. \_\_\_\_\_



JAMES TRUMAN CURRY, SR.  
1965



Cataloging information

Curry, James T., Sr. (b. 1916)

Metallurgist

Metallurgist for Empire Star Mine and Newmont Exploration, 1932-1955; Plant Manager for Calaveras Cement Company, 1956-1975, 1990, x, 139 pp.

Growing up in Berkeley, California; working for Newmont Mining Corporation and Newmont Exploration as laborer, metallurgist; efforts in community relations and air quality control as cement plant manager in Redding, California, 1959-1975; changes in working conditions and management attitudes, 1932-1975.

Introduction by Grant W. Metzger, Calaveras Cement Company.

Interviewed in 1989 and 1990 by Eleanor Swent for Western Mining in the twentieth Century series. The Regional Oral History Office, The Bancroft Library, University of California at Berkeley.





## TABLE OF CONTENTS--James T. Curry

PREFACE	i
INTRODUCTION by Grant W. Metzger	vii
INTERVIEW HISTORY	viii
BREIF BIOGRAPHY	x
I GROWING UP IN BERKELEY	1
II WORKING FOR NEWMONT MINING CORPORATION, 1932-1955	7
The Murchie Mill	7
The Empire Mill and Cyanide Plant	10
The Browns Valley Mill	11
Safety and Health of Mill Workers	15
The Getchell Mill	17
Labor Conditions at Empire and Getchell	22
Metallurgist at the Empire	26
Friends and Social Life in Grass Valley	28
III WORKING FOR CALAVERAS CEMENT COMPANY, 1956-1975	33
Process Engineer at San Andreas	34
Project Manager at the New Redding Plant	35
Environmental Problems: Dust, Vibration, Noise	38
Labor Relations	41
Community Relations	46
Acquiring Land and Claims	49
IV RETIREMENT	54
V FURTHER RECOLLECTIONS OF EARLY YEARS IN BERKELEY	58
VI MORE ABOUT WORKING FOR NEWMONT	65
Murchie	65
Empire	67
Browns Valley	71
Social Life and Health Care	73
Learning Metallurgy On the Job	77
Getchell	79
Idarado and Telluride, Colorado	81
Newmont Exploration Company	83
VII MORE ABOUT WORKING FOR CALAVERAS	88
The San Andreas Plant	88
The Redding Plant	89
Filing the Claims	90
Union Contracts	96

Dust Control; Shasta County Permits	98
Unique Downhill Conveying System	104
Computers, Spectrographic Analysis	106
Other Cement Plants: Japan, England, Albuquerque	108
Tunneling Under the Freeway at Redding	110
Pit River and Oroville Dams	112
Shasta County air Pollution Committee	113
VIII FAMILY, FRIENDS, TRAVEL	117
James T. Curry, Jr.	117
First Trip to Europe, 1962	118
Australia	126
Italy	127
England and Scotland	129
David S. Curry	131
TAPE GUIDE	133
APPENDIX--James T. Curry, "Raw Materials Handling by a Downhill Conveying System", <u>Pit and Quarry</u> , February 1970.	134
INDEX	137

## PREFACE

The oral history series on Western Mining in the Twentieth Century documents the lives of leaders in mining, metallurgy, geology, education in the earth and materials sciences, mining law, and the pertinent government bodies. The field includes metal, non-metal, and industrial minerals, but not petroleum.

Mining has changed greatly in this century: in the technology and technical education; in the organization of corporations; in the perception of the national strategic importance of minerals; in the labor movement; and in consideration of health and environmental effects of mining.

The idea of an oral history series to document these developments in twentieth century mining had been on the drawing board of the Regional Oral History Office for more than twenty years. The project finally got underway on January 25, 1986, when Mrs. Willa Baum, Mr. and Mrs. Philip Bradley, Professor and Mrs. Douglas Fuerstenau, Mr. and Mrs. Clifford Heimbucher, Mrs. Donald McLaughlin, and Mr. and Mrs. Langan Swent met at the Swent home to plan the project, and Professor Fuerstenau agreed to serve as Principal Investigator.

An advisory committee was selected which included representatives from the materials science and mineral engineering faculty and a professor of history of science at the University of California at Berkeley; a professor emeritus of history from the California Institute of Technology; and executives of mining companies.

We note with much regret the death of two members of the original advisory committee, both of whom were very much interested in the project. Rodman Paul, Professor Emeritus of History, California Institute of Technology, sent a hand-written note of encouragement just a few weeks before his death from cancer. Charles Meyer, Professor Emeritus of Geology, University of California at Berkeley, was not only an advisor but was also on the list of people to be interviewed, because of the significance of his recognition of the importance of plate tectonics in the genesis of copper deposits. His death in 1987 ended both roles.

Thanks are due to other members of the advisory committee who have helped in selecting interviewees, suggesting research topics, and raising funds.

Unfortunately, by the time the project was organized several of the original list of interviewees were no longer available and others were in failing health; therefore, arrangements for interviews were begun even without established funding.

The project was presented to the San Francisco section of the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME) on "Old-timers Night," March 10, 1986, when Philip Read Bradley, Jr. was the speaker. This section and the Southern California section provided initial funding and organizational sponsorship.

The Northern and Southern California sections of the Woman's Auxiliary to the AIME (WAAIME), the California Mining Association, and the Mining and Metallurgical Society of America (MMSA) were early supporters. Several alumni of the University of California College of Engineering donated in response to a letter from Professor James Evans, the chairman of the Department of Materials Science and Mineral Engineering. Other individual and corporate donors are listed in the volumes. The project is ongoing, and funds continue to be sought.

Some members of the AIME, WAAIME, and MMSA have been particularly helpful: Ray Beebe, Katherine Bradley, Henry Colen, Ward Downey, David Huggins, John Kiely, Noel Kirshenbaum, and Cole McFarland.

The first five interviewees were all born in 1904 or earlier. Horace Albright, mining lawyer and president of United States Potash Company, was ninety-six years old when interviewed. Although brief, this interview will add another dimension to the many publications about a man known primarily as a conservationist.

James Boyd was director of the industry division of the military government of Germany after World War II, director of the U.S. Bureau of Mines, dean of the Colorado School of Mines, vice president of Kennecott Copper Corporation, president of Copper Range, and executive director of the National Commission on Materials Policy. He had reviewed the transcript of his lengthy oral history just before his death in November, 1987. In 1990, he was inducted into the National Mining Hall of Fame, Leadville, Colorado.

Philip Bradley, Jr., mining engineer, was a member of the California Mining Board for thirty-two years, most of them as chairman. He also founded the parent organization of the California Mining Association, as well as the Western Governors Mining Advisory Council. His uncle, Frederick Worthen Bradley, who figures in the oral history, was in the first group inducted into the National Mining Hall of Fame, Leadville, Colorado, in 1988.



Frank McQuiston, metallurgist, vice president of Newmont Mining Corporation, died before his oral history was complete; thirteen hours of taped interviews with him were supplemented by three hours with his friend and associate, Robert Shoemaker.

Gordon Oakeshott, geologist, was president of the National Association of Geology Teachers and chief of the California Division of Mines and Geology.

These oral histories establish the framework for the series; subsequent oral histories amplify the basic themes.

Future researchers will turn to these oral histories to learn how decisions were made which led to changes in mining engineering education, corporate structures, and technology, as well as public policy regarding minerals. In addition, the interviews stimulate the deposit, by interviewees and others, of a number of documents, photographs, memoirs, and other materials related to twentieth century mining in the West. This collection is being added to The Bancroft Library's extensive holdings.

The Regional Oral History Office is under the direction of Willa Baum, division head, and under the administrative direction of The Bancroft Library.

Interviews were conducted by Malca Chall and Eleanor Swent.

Willa K. Baum, Division Head  
Regional Oral History Office

Eleanor Swent, Project Director  
Western Mining in the Twentieth  
Century Series

October 1990  
Regional Oral History Office  
University of California, Berkeley



Western Mining in the Twentieth Century Oral History Series  
Interviews Completed or in Process, October 1990

Horace Albright, Mining Lawyer and Executive. U.S. Potash Company. U.S. Borax, 1933-1962, 1989

James Boyd, Minerals and Critical Materials Management: Military and Government Administrator and Mining Executive. 1941-1987, 1988

Philip Read Bradley, Jr., A Mining Engineer in Alaska, Canada, the Western United States, Latin America, and Southeast Asia, 1988

Catherine C. Campbell, Ian and Catherine Campbell. Geologists: Teaching, Government Service, Editing, 1989

James T. Curry, Sr., Metallurgist for Empire Star Mine and Newmont Exploration, 1932-1955; Plant Manager for Calaveras Cement Company, 1956-1975, 1990

Helen R. Henshaw, Recollections of Life with Paul Henshaw: Latin America, Homestake Mining Company, 1988

Lewis L. Huelsdonk, Manager of Gold and Chrome Mines. Spokesman for Gold Mining. 1935-1974, 1988

Arthur I. Johnson, Mining and Metallurgical Engineer in the Black Hills: Pegmatites and Rare Minerals. 1922 to the 1990s, 1990

Evan Just, Geologist: Engineering and Mining Journal. Marshall Plan. Cyprus Mines Corporation. and Stanford University. 1922-1980, 1989

Malozemoff, Plato, A Life in Mining: Siberia to Chairman of Newmont Mining Corporation. 1909-1985, 1990

Frank Woods McQuiston, Jr., Metallurgist for Newmont Mining Corporation and U.S. Atomic Energy Commission. 1934-1982, 1989

Gordon B. Oakeshott, The California Division of Mines and Geology. 1948-1974, 1988

Samuel S. Arentz, Jr. (Escalante Mine), in process

Donald Dickey (Oriental Mine), in process

James M. Gerstley (U.S. Borax), in process

George Heikes (tungsten, zinc), in process

Vincent Perry (Anaconda), in process

Carl Randolph (U.S. Borax), in process

Eugene Smith (U.S. Borax), in process

Langan Swent (San Luis, Homestake, uranium mining), in process

Alexander Wilson (Utah International), in process

## ADVISORY COMMITTEE, WESTERN MINING IN THE TWENTIETH CENTURY

Professor Douglas Fuerstenau, Principal Investigator  
Department of Materials Science and Mineral Engineering  
University of California, Berkeley

Mr. Philip R. Bradley  
Former Chairman, California State Mining and Geology Board

Professor Neville G. Cook  
Department of Materials Science and Mineral engineering  
University of California, Berkeley

Professor Roger Hahn, Department of History  
University of California, Berkeley

Mr. John Havard  
Vice President (retired), Kaiser Engineers, Inc.

Mr. Clifford Heimbucher, C.P.A.  
Consultant, Varian Associates, Inc.

Mr. John R. Kiely  
Senior Executive Consultant, Bechtel, Inc.

Plato Malozemoff  
Chairman Emeritus, Newmont Mining Corporation

Mr. Joseph P. Matoney  
Vice President - Coal, Kaiser Engineers, Inc.

Mrs. Donald H. McLaughlin  
Founder, Save San Francisco Bay Association

Professor Malcolm McPherson  
Department of Materials Science and Mineral Engineering  
University of California, Berkeley

\*Professor Emeritus Charles Meyer, Department of Geology  
University of California, Berkeley

Professor H. Frank Morrison, Chairman  
Department of Materials Science and Mineral Engineering  
University of California, Berkeley

Professor Joseph A. Pask  
Department of Materials Science and Mineral Engineering  
University of California, Berkeley

\*Professor Emeritus Rodman Paul, Department of History  
California Institute of Technology

Mr. Langan W. Swent  
Vice President (retired), Homestake Mining Company

\* Deceased during the period of the project



DONORS  
TO  
THE WESTERN MINING IN THE TWENTIETH CENTURY  
ORAL HISTORY SERIES  
1986-1990

Organizations

American Institute of Mining, Metallurgical, and Petroleum Engineers,  
San Francisco and Southern California Sections  
Woman's Auxiliary to the AIME, Southern California and Northern California  
Sections  
California Mining Association  
The Jackling Fund of the Mining and Metallurgical Society of America

Corporations

Bechtel Group Incorporated  
Cyprus Minerals Company  
Freeport-McMoRan  
Homestake Mining Company  
Kennecott Corporation  
Krebs Engineers  
Newmont Mining Corporation  
United States Borax & Chemical Corporation

Patrons

James Boyd  
Donald Dickey  
J. Ward Downey  
James M. Gerstley  
Mrs. Paul C. Henshaw, in memory of her husband, Paul C. Henshaw  
Plato Malozemoff Foundation  
Dean A. McGee  
Mrs. Frank W. McQuiston, Jr., in memory of Frank W. McQuiston, Jr.  
Langan and Eleanor Swent

Individuals

Claude J. Artero  
Clemence DeGraw Jandrey Boyd  
Philip and Katherine Bradley  
Catherine C. Campbell  
Albert T. Chandler  
Stanley Dempsey  
Louis R. Goldsmith  
Mrs. Bruce S. Howard, in memory of  
Henry Harland Bradley  
Lewis L. Huelsdonk  
Howard Janin  
James H. Jensen  
Jack M. Jones  
Evan Just

James C. Kimble  
Noel W. Kirshenbaum  
Plato Malozemoff  
Sylvia C. McLaughlin, in memory of  
Jay Kimpston Swent  
L. Arthur Norman, Jr.  
Gordon B. Oakeshott  
Richard W. Rees  
Richard M. Stewart  
Simon D. Strauss  
John R. Struthers  
William I. Watson  
William B. Whitton



## INTRODUCTION by Grant W. Metzger

Some of our most interesting mining people have quietly and effectively made their marks, and then, like generals, they quietly leave the field. They are the doers who get things done without making too many waves. Jim Curry fits this category.

A very popular man among his peers, with a dry sense of humor, he makes friends easily. His even temperament stood him well in the work place as well as socially.

When Jim was sent to Redding to manage the new cement plant that Calaveras Cement wanted to build, he had multiple problems to face. The idea of a cement plant on the very edge of this pristine recreation area wasn't exactly welcomed with open arms by some of the locals. By a friendly approach to city and county officials, cooperating with forest service personnel, joining the Rotary Club, etc., plus attending countless meetings, the objections were overcome and necessary permits were obtained. Within a very few years, the plant was appreciated by the community for the contribution to the local economy. Jim and his staff members get all the credit for a job well done.

I look back on many pleasant days spent with Jim and his family at their home, our home, or on various trips. About the only thing Jim was never able to figure out was how to catch fish. In fact we usually left him home when we went fishing. However, Jim would generally have the martinis ready for us when we returned, so no one, including the fish, complained about this inability.

I can say that Jim was fortunate during his career to have worked with competent men who were good teachers, and he was capable of learning from them. He also has had a very charming wife and two fine sons to keep him inspired. It helps to get a few breaks along the way, but usually these aren't just luck, you earn them with a lot of hard work.

Grant W. Metzger  
Vice President-Production (retired)  
Calaveras Cement Company

15 August 1990  
San Andreas, California



## INTERVIEW HISTORY--James T. Curry, Sr.

James Curry, Sr., was selected by the advisory committee to be interviewed for the series in Western Mining in the Twentieth Century because of his experience with gold mining in the historic Northern Mines area of the Mother Lode as well as his work with the Calaveras Cement Company in a newer branch of the mining industry. He was metallurgist for Newmont Mining Company in Grass Valley, succeeding Frank Woods McQuiston, Jr., subject of an earlier oral history in the series.

The life and career of James Curry connect to nearly all of Western mining. His father worked in gypsum mines near Carson City, Nevada; his aunt Gwynne was married to Fred Searls, famed mining engineer from Grass Valley who headed the Newmont Mining Corporation; his wife, Nancy Sherwin Curry, was born in a mining community, Tonopah, Nevada; his father-in-law, John Sherwin, was associated with F. M. "Borax" Smith in the West End Chemical Company in the Searles Lake-Trona district of southern California; his son James, Jr., is chief executive officer of BHP-Utah, one of the world's major mining enterprises. His own metallurgical work involved ores from the Newmont exploration projects, including those in South America. There is even a connection with Africa, and not only through Newmont; he observes that the Calaveras company guest houses follow a tradition begun by the founding family at the mines of South Africa.

James Curry, Sr., began work in 1932 as a mucker in the Murchie mill near Grass Valley, seven days a week, changing shifts every week, for \$2.00 a day. At that time the stamp mills deafened the workers and protective efforts were minimal.

Hard work, personal integrity, willingness to learn, and an amiable disposition contributed to his success. He learned from each job he held, and from every expert he assisted, until he was worked up to being put in charge of metallurgy for Newmont at their Grass Valley laboratory. When the company's metallurgical laboratories were consolidated on the East Coast, he did not want to be transferred, so he left Newmont and began to work for Calaveras, first as an engineer in San Andreas, then as plant manager for the new cement plant at Redding.

Here his gifts for conciliation came into play as he calmed the fears of those in the community who remembered earlier mining which had damaged the environment. In his oral history, he recalls these efforts. There were also technological challenges in building a new plant on both sides of a major freeway; the result was the development by Calaveras of a unique haulage system, which he describes.

The letter inviting Mr. Curry to participate in the series was sent on 15 August 1989. We met at the Curry home in Nevada City, California, on 24 October 1989 for a planning session and the first interview. A second interview was held on 15 December 1989 in the corporate offices of BHP-Utah in San Francisco. This interview covered much of the same ground as the first, but in more depth; his modesty about his accomplishments presented some challenge. A third interview was held at my home in Piedmont, California, on 13 June 1990. The transcript of the interviews was sent to Mr. Curry for review and returned very promptly with only minor changes. He was extremely cooperative and gracious about the interview and review process.

The resulting oral history is of interest and significance for its recollection of a career which began and ended in the Grass Valley-Nevada City area, spanning the time from stamp mills to computerized controls, from work with no fringe benefits to awarding very generous benefits, from corporate disregard for environmental consequences to extreme concern for air quality.

Grant W. Metzger, retired vice president of production for Calaveras Cement Company, wrote the introduction. He was a longtime friend of the Currys in Nevada City before hiring Jim to work in San Andreas and Redding.

The tapes of the interviews are deposited at The Bancroft Library, University of California at Berkeley.

Eleanor Swent, Project Director  
Western Mining in the Twentieth  
Century Series

14 August 1990  
Regional Oral History Office  
University of California, Berkeley



Regional Oral History Office  
Room 486 The Bancroft Library

University of California  
Berkeley, California 94720

BIOGRAPHICAL INFORMATION

(Please write clearly. Use black ink.)

Your full name James Thomas Curry  
Date of birth Apr. 4, 1913 Birthplace San Francisco, Ca.  
Father's full name Floyd Calvin Curry  
Occupation Builder Birthplace Wesley, Ohio  
Mother's full name Verma Davis Curry  
Occupation Housewife Birthplace Reed, Nev.  
Your spouse Nancy Sherman Curry  
Your children James T. Curry, Jr. David Sherman Curry

Where did you grow up? Berkeley, Ca.  
Present community Nevada City, Ca.  
Education Berkeley Jr. High School then High School  
Five Terms Armstrong Business School  
Occupation(s) Metallurgist - Operating Manager  
Areas of expertise Management

Other interests or activities Woodworking - Cooking

Organizations in which you are active Nene.





## I GROWING UP IN BERKELEY

[Interview 1: October 24, 1989]##\*

Swent: This is Eleanor Swent interviewing James Curry in Nevada City on October 24, 1989. We're just beginning our first interview on Mr. Curry's career in mining and metallurgy, gold, and concrete.

You can tell us a little about where and when you were born, and where you grew up.

Curry: I was born in San Francisco on the first of April. April Fool's Day. I think my family was very happy because I avoided the March bills. At the age of one, the family moved into a house that my father built on Elmwood Avenue in Berkeley. Do you know Elmwood Avenue?

Swent: Yes, I know the Elmwood District very well.

Curry: I lived there from the time I was one year old until I left home in 1932 at the age of nineteen. Went through grammar school, John Muir School. And then junior high, which was Willard, and then Berkeley High. I missed college--I had to go to work. So I wrote to Nevada City and got a job through the help of my uncle-in-law, Fred Searls, Jr.

Swent: Your father, you said, died when you were a little boy.

Curry: Yes.

Swent: Fred Searls was your mother's--

Curry: My mother's sister's husband.

Swent: I see. Up here in Grass Valley?

---

\*This symbol (##) indicates that a tape or a segment of a tape has begun or ended. For a guide to the tapes see page 133.

Curry: They weren't here then, no. Fred Searls was president--I guess he called himself the executive president of Newmont Mining back in New York. So that's where they were.

Swent: He was a very flamboyant and successful person.

Curry: Yes, yes. He was one of a kind. He was different.

Swent: Do you have any childhood memories of him?

Curry: Not particularly, but I've heard a lot of stories about him that led me to believe that he was a little different from others. He sort of earned his way through college by boxing. He wasn't a professional, but I understood he would go down to Oakland and pick up a fight with somebody for a few dollars. And he carried that on throughout his active life, I think. He always loved to get in a ring with his friends or his brothers. I've heard of his brothers saying that quite often they'd wind up with a broken rib or two.

Swent: Was he a belligerent type of person?

Curry: No. No, not really. He just liked to fight.

Swent: He was known for his rough clothes that he wore.

Curry: Yes, he didn't care much about how he looked.

Swent: Wore boots in New York City, I think.

Curry: I heard that he checked into the Palace Hotel in San Francisco in his diggers one day. They were about to throw him out, but he convinced them that he was registered.

Swent: Did he ever come to visit you?

Curry: Yes, he used to follow us around. I worked for a while in Browns Valley, and he came down there to look over the mine and in Colorado I ran into him a time or two. We had him for dinner here and there. He was not very helpful in the kitchen. I remember Brower Dillinger saying that he was always happy to be helpful, but he was apt to put the electric toaster in the dishwasher. [Brower was a junior engineer at the Empire Mine and later became assistant manager.]

Swent: Fred Searls had children also, didn't he?

Curry: Had five children. Three girls, two boys.

Swent: They'd be your first cousins.

Curry: Yes. There's one of them, as I say, is living here in Nevada City. And the other boy was a Newmont employee in Australia. We see him once in a while. He comes over here or we go over there. I think he was in charge of their Pacific Rim Southern Pacific mining activities.

Swent: Didn't he become an Australian citizen?

Curry: Yes. He's the third oldest, I think. Two girls are older than he is, and then our cousin, Fred the fourth, came along, and then the youngest one is Helen, who lives back in Chicago.

Swent: And you said that your wife, Nancy [Sherwin], was also from Berkeley.

Curry: Yes. She was born in Tonopah, Nevada, in 1915 and lived there for three years. Her father was manager of the West End Mine. I don't know whether they closed that down, or whether he just moved on to greener pastures, but they wound up in Las Vegas for a short period of time, and then he was transferred to the Bay Area and was manager for West End Chemical, which subsequently was bought by Stauffer Chemical. And since then I don't know what happened.

Swent: In my reading, I found this reference to Nancy's father. It is from a biography of "Borax" Smith\* and it says that in 1915, "the company acquired John W. Sherwin as its general manager. Sherwin was a capable and highly regarded mining man who served [Pacific Coast] Borax [Company] first in Tonopah and later in Oakland, as a member of a small but very loyal group,...serving with much distinction." That is a nice compliment to her father.

Curry: Yes, it is.

Nancy's uncle William, "Uncle Billy" Blackburn, held some position with the Tonopah Mining Company in Tonopah during the early 1900s and later, in the 1920s or 1930s was mine manager, I think, for the Yukon Treadwell Company at Tybo, Nevada. Also her cousin Sherwin Lowe spent his entire working years as metallurgist for the Hudson Bay Mining and Smelting Company at Flin Flon, Manitoba, Canada. On retirement he moved to southern California, probably to get warm, and bought an automobile agency. I recall his telling me that his first trip to the mine was on a dog sled. I think he died in the late 1930s or early 1940s.

---

\*Hildebrand, George, *Borax Pioneer: Frances Marion Smith* (Howell-North Books, San Diego, 1982)

Nancy went through various schools in Berkeley. Spent a year at the University of California. Her father died and she dropped out of school. Shortly after that, we were married and came up here.

Swent: What about Berkeley High? Do you have any particularly interesting memories of Berkeley High?

Curry: Well, not really. I had trouble in several subjects. I was more adept in engineering and mechanical drawing and things like that. French gave me an awfully bad time, and I also had a little trouble in mathematics. French I had to take twice, to get through one semester. Since then, on our travels through Europe, I've become fairly adept at speaking French, and I wish I'd spent more time in high school studying it. Oh, I had the usual fun and games in high school. Spent more time looking out the window than I did looking at books.

Swent: And the Berkeley fire. Did you have any particular recollections?

Curry: That was on the other side of the campus. I remember the fire. My mother and I got on the streetcar and went up and looked at it one afternoon.

Swent: You must have been about ten?

Curry: That was 1923, wasn't it?

Swent: I think so.

Curry: I think I was just ten. That was devastating; I remember that quite well. But that's about the size of it. It didn't really mean much to me.

Swent: What did you wear to school?

Curry: Oh, a pair of dirty old cords, a shirt, a jacket, when the weather required it. And that was about it.

Swent: What kind of shoes?

Curry: I don't think we had sneakers in those days. I think we had leather shoes. Must have been, because I remember I used to have to take a pair down every once in a while to get it half-soled. We didn't have to sole the whole shoe, but just the part that was worn.

Swent: Your mother had to iron all those shirts?



Curry: I can't remember whether they required ironing or not. Must have. That slips my memory.

Swent: Did you go home for lunch?

Curry: No, no. Took the street car back and forth. I walked occasionally but it was a rather long jaunt.

Swent: So you carried a lunch?

Curry: No, I ate in the school cafeteria. That cost twenty-five cents. Street car rides for school children cost three cents. You bought tickets and used them and that was a cheaper way to get around.

Swent: You could send a letter for three cents then, too.

Curry: Right. I got my first car in 1928, I think when I was a senior in high school, so I was driving that jalopy back and forth instead of taking the streetcar.

Swent: What was it?

Curry: It was an old Chevrolet roadster, hanging together with baling wire. It had twenty-five thousand miles on it, which wasn't too bad. Cost me forty-five dollars, which was more than I was making, working after school.

Swent: What were you doing after school?

Curry: I worked in a hardware store. I worked for a local hardware store two hours a day after school, and all day Saturday, for which I got paid seven dollars a week. That would be called child labor these days.

Swent: Yes, I suppose. You were probably happy to do it, though.

Curry: Well, yes. It gave me some spending money. Things didn't cost too much in those days, so it seemed to take care of the gasoline and the odds and ends.

Swent: So then when you graduated, you had to think about what you would do.

Curry: I spent a semester or two taking post-graduate work at Berkeley. Then I put in a semester or two at Armstrong's Business School, which I thought I might find useful, but that wasn't very exciting either.

Swent: What sort of things did you study there?

Curry: Oh, I took bookkeeping and shorthand, and--must have been other things to take up my time, but I can't remember what they were.

Swent: Typing?

Curry: I took typing in Berkeley. Got to be quite an adept typist; I can still do it if I have to. It's like driving a car; once you learn, why, you never forget.

Swent: It's useful. Did you take chemistry in high school?

Curry: I didn't take chemistry; I took a general science course. I wish I had.

Swent: Yes, you had to learn it afterwards, didn't you? Was it available in high school?

Curry: Oh, yes.

Swent: So after Armstrong, then, you were out--

Curry: Then I came up here.

Swent: And that was in 19--

Curry: This was December 1932.

## II WORKING FOR NEWMONT MINING CORPORATION, 1932-1955

### The Murchie Mill

Swent: Not the best time to be job hunting?

Curry: Things were pretty busy up here. They were just opening up the Murchie Mine and they put me to work in the mill.

Swent: Was this a Newmont mine?

Curry: Yes, Newmont was controlling it. It was under the heading of the Empire Star at that time. The following January was one of the roughest they ever had, about four feet of snow, and cold weather. The Murchie mill was situated on Deer Creek, which was freezing. And the mine hadn't developed to the extent where they could run the mill twenty-four hours a day, so they'd run it until ten or eleven o'clock at night, when they ran out of ore, shut it down. And that gave it the rest of the night to freeze up. So the next morning was spent running around with flaming rags, torches, and thawing pipes out.

Swent: The mine worked on day shift?

Curry: The mine was just working day shift at that time. After they developed a little further, they ran two shifts in the mine, three shifts in the mill, seven days a week. It was interesting. I was in charge of running the concentrate filter and sacking concentrates, and I sacked about six tons a day, sent it over to the Empire cyanide plant for further treatment.

Swent: What kind of filters were they?

Curry: They just had one, it was an Oliver filter.

Swent: Developed here?

Curry: That's right. At the North Star, or the Empire. I think the original Oliver filter drawings were stored at the Empire Mine for many years; I don't know what happened to them. It could be that the Empire Park people took it over.

Swent: Weren't they vertical filters?

Curry: No, these were drum filters. Cylinders. The plate filters came along a little later, I think.

Swent: What was your job?

Curry: It was a continuous filter. I just had to keep the thing operating, full of concentrate so that it would dry them out, filter the water out of it.

Swent: How did you get the concentrates in the bags?

Curry: It went from a bin where it fell to the floor into a weighing box, where it was sampled. And it went into the bag by brute strength and a shovel.

Swent: You were doing that?

Curry: I was doing that.

Swent: What kind of bag was it?

Curry: They were jute bags. You wouldn't call them canvas. Regular sacking material, you know? And they held a hundred pounds.

Swent: Somebody would hold the bag?

Curry: No, it would fit in a box or a jig.

Swent: I see, you had a rack or something.

Curry: Yes, and then you'd just fill it up and scoot it across the floor and pile it in piles. And then it was loaded onto a tram that pulled it up to the road.

Swent: Was it an aerial tram?

Curry: No, it ran on the tracks. Being down on the creek, it had to be raised up to where the roadway was.

Swent: That sounds like very hard work.

Curry: It was. It developed a few muscles, which were useful later on.



Swent: Did you look on this as just a temporary job?

Curry: Well, I hoped so.

Swent: Do you remember what you were paid?

Curry: I started out at twenty-five cents an hour, and then, when I found that they hadn't done me in, I was raised to fifty cents an hour. From two dollars a day to four dollars a day.

Swent: What do you mean, found out?

Curry: I was wondering whether I was going to be able to keep on my feet doing all this heavy work, but it was actually good, healthy work.

Swent: Where did you stay?

Curry: I stayed in the Searls house. By myself. Nobody was living there, so I did double duty as a housekeeper and as a concentrate sacker.

Swent: Were you actually responsible for the house?

Curry: Yes, I was. As a part of living there, I'd see that the pipes didn't freeze and that the gas kept working.

Swent: It was a large house.

Curry: It's a large house. I didn't do any cooking; I found a very handy cafe down in Nevada City that would give you meals and put up your lunch for a dollar a day.

Swent: What was the name of it?

Curry: The Shamrock Cafe on Broad Street. They were very kind; the lady said that you can't have a steak every night, but you can have one once in a while.

Swent: For a dollar a day.

Curry: For a dollar a day. Isn't that strange?

Swent: Times have changed.

Curry: Yes. That was pretty good food, too. You'd get all you wanted for breakfast. The dinners were sort of a fry type thing, you know? No roasts or anything fancy. And the lunch was adequate, a couple of sandwiches, and a piece of cake, pie, thermos bottle of coffee.

Swent: Did you carry a bucket?

Curry: Yes. Lunch bucket. Yes. Everybody did.

The Empire Mill and Cyanide Plant

Curry: And after that I got a chance to go to the Empire, where I worked in the mill for a while.

Swent: What were you doing there? .

Curry: Oh, just anything they wanted me to do. Mostly concentrates again. The concentrates came off of a Wilfley table, and the water--this is fairly coarse material, so the water drained off of it fairly easily. And this stuff was loaded into another tram that led down to the cyanide plant over a trestle. I think there were about three of us doing that; it didn't take too long, half a day. The rest of the day I spent getting acquainted with the mill, setting tappets, and changing shoes, and dies. It was just general handiwork.

Swent: Who were the people that you were meeting at this time?

Curry: Frank Hooper was the mill superintendent, and I got acquainted with all the people in the mill--I can't remember too many of their names; I don't think they'd mean much.

Swent: Was the fact that you were Fred Searls's nephew any help or hindrance?

Curry: No, it didn't seem to be; I was treated just like the rest of them. Sometimes I thought it might be a hindrance. This old business of nepotism, you know, raises its ugly head.

Swent: It's not always a help.

Curry: No. I can't remember how many weeks I spent in the mill.

Swent: Were you courting at this time, also, or were you already married?

Curry: No, I was living alone, and Nancy was still in Berkeley. I went from there down to the Empire cyanide plant where I was learning the ropes.

Swent: Was this a training program of sorts?

Curry: Not really, just go in there and do what you're told, and learn the ropes.

Swent: These shifts, did you request moving, or did they ask you to move?

Curry: No, I was told to move down there. Somewhere along the line, I was put on shifts; there were three of us on a shift, the shift boss and two helpers. There I learned what happened to the concentrates that were sacked at the Murchie, and up above, at the Empire Mill. I went through the various stages of cyanidation. That was a seven-day-a-week job, changing shifts every week, which kept you from getting into too much trouble.

Swent: That's a little hard, isn't it, every week. Seven to three?

Curry: It was earlier than that. It was six-thirty to two-thirty. Two-thirty to ten-thirty.

Swent: Graveyard was the one beginning at ten-thirty; is that right?

Curry: Graveyard began at ten-thirty until six-thirty.

Swent: It helps to be young.

Curry: Yes. And those short changes were the ones that killed us.

Swent: The short change is when you go from graveyard to day shift, isn't it?

Curry: Yes, and then from day shift to afternoon shift; and then from afternoon shift to graveyard, you had a long change, which ran from two-thirty Saturday until midnight Sunday, or ten-thirty Sunday night, which was about normal.

Swent: So you worked six days a week, then.

Curry: Seven. A seven-day week.

### The Browns Valley Mill##

Curry: And from the Empire, I went to Browns Valley as a millman.

Swent: I don't know where that is.

Curry: Browns Valley is twelve miles this side of Marysville. And I worked shifts there.

Swent: This is Newmont still?

- Curry: Yes. That mill ran twenty-four hours a day, seven days a week, with one person in the mill. So there were three of us that ran that mill twenty-four hours a day.
- Swent: I'm amazed. I really didn't realize that people worked seven days a week here, in those days.
- Curry: Oh, yes, yes. There was one period of time there where we were short a millman and two of us ran the mill twenty-four hours a day for a period of, I think, several weeks, a month or so.
- Swent: And changing every week, that's tiring.
- Curry: When we changed every week, I stayed down there. They had a bunkhouse for the miners, and I just moved in there, slept for eight hours and then went to work again.
- Swent: I think now most people change every two weeks, don't they?
- Curry: It depends. It depends upon what the consensus want to do.
- Swent: That's hard, though.
- Curry: It is hard, it is hard.
- Swent: Did you have at any time a vacation of some sort?
- Curry: When I got married, I got two weeks. And during a bad windstorm they had in Browns Valley that blew all the power lines down, we had a couple of days where we didn't work.
- Swent: And what about benefits? What did the company provide for you? The bunkhouse, of course, would be free, if you stayed there?
- Curry: The bunkhouse was free for us. I think that the miners who lived there paid a nominal sum, but when I was just staying there one night every three weeks or two weeks, or whatever it was, it was free.
- Swent: Oh, you were going down every day from up here?
- Curry: From here, yes. Which in those days was pretty much of a drive in itself, because the roads weren't all they are today. Have you been on that road at all?
- Swent: I don't think I have. That's down toward Marysville.
- Curry: They have a new highway there now, from Grass Valley down, which takes out a lot of the effort and pain.



Swent: I'm sure the old one was pretty narrow.

Curry: We'd drive in the fog, and, of course, they didn't have a line down the middle, in those days. When you'd run into the fog, and before you got down below it, there was this zone where you couldn't see anything. And many's the night where I've gotten out of the car to see what side of the road I was on, coming home at midnight. That was a shift period where we worked from eight to four, and from four to midnight. So, times are different. Depends upon what everybody wants.

Swent: Were you still paid four dollars a day for this?

Curry: No, it was a little higher in those days. It may have been five.

Swent: Of course prices were lower then, too.

Curry: Sure.

Swent: But gold was booming at that time, wasn't it?

Curry: Well, not too much. The price of gold had gone to thirty-five dollars, but the costs were increasing, so the margin of profit was getting slimmer all the time. And I don't think Browns Valley was a very profitable mine; it had its ups and downs.

Swent: What kind of mill was that?

Curry: It was a stamp mill, to begin with. Stamps and amalgam plates, and a couple of flotation cells.

Swent: Oh, that was kind of new then.

Curry: Well, this was in 1936 and '38.

Swent: I think that McQuiston was the one who started flotation here, wasn't he?

Curry: He started flotation in the Empire. And Murchie had flotation all along. In 1932, when I went there, that was their main mode of recovery.

Swent: Very up-to-date.

Curry: Yes. Of course, they were old cells; they created a lot of problems, but they did the job.

Swent: Were you learning anything about this?

Curry: Oh, yes, yes. That was all part of the effort.

Swent: What did they do with the concentrate from Browns Valley?

Curry: They shipped those up to the Empire, also, trucked them up.

Swent: So this is just a concentrating plant there?

Curry: Right, right. They changed it several times while I was there; they shut down at one time and then put in a ball mill and classifier, took away the plates, put in a jig or two, to get what free gold was available.

Swent: What kind of ball mills were these, do you know?

Curry: That was a Hardinge that they had in Browns Valley. It was a second-hand one. It was a real problem; it was down for repairs quite a bit.

Swent: How do you get a second-hand mill? How do you find out about them?

Curry: I don't know; I wish I knew so I could tell them not to get those antiquated things. It came apart at the trunion one day, and just fell to the ground, and all the contents spewed out on the floor. Then they put her back together again.

Swent: You had to scoop them all up?

Curry: Yes. They had quite a bit of high-grade in Browns Valley, and all the stuff that came out of the ball mill had to be scooped up into barrels. The liners had to be taken out to relieve the weight, and a lot of gold had concentrated behind the liners, and that all was scooped up into the barrels and taken up to the Murchie Mine, which was closed down at that time. And I came along with it, to recover the gold in the machinery they had at the Murchie, which was a burden pan. Are you familiar with a burden pan?

Swent: I just know the word; I don't know what it is.

Curry: It's a big bowl; it's mounted on an angle, and a steel ball, about the size of a cannon ball, about, yea big.

Swent: Like a bowling ball.

Curry: Yes. It's put in there, and that's used to crush the material, and also to amalgamate it. So, I think I spent about, oh, must have been almost a week, living up here with friends.

Swent: At the Murchie again.

Curry: Yes. That took care of that whole episode.

Swent: Could you leave it at night?

Curry: Oh, yes. I shut things down at night pretty well; locked.

Swent: There wasn't any danger of getting in?

Curry: Well, they could have, if they'd known what was going on, I think, but nothing happened.

Swent: You locked things up?

Curry: Yes. I'd show up in the morning and start everything up again. I don't know whether Ed Berger ever came into your--he was sort of a general superintendent at the Murchie at that time, and also at Browns Valley. He has since passed on. Ken Tatman was an associate at that time. He was at the Murchie when I was working there; went on to become a superintendent of the mills at Colorado, for Newmont. He spent time at Ouray, and at Leadville, and at Telluride.

Swent: Frank McQuiston spoke of him.

Curry: Yes, probably. He's still alive and living here in Nevada City. I just don't see him as often as I would like. I don't know why, we just somehow don't cross paths. Let's see, Browns Valley. We were cleaning up there. Another rearrangement of the Browns Valley mill came after the war. They took the stamps out, fortunately; they were the source of some of my problems with hearing. Not very many millmen kept their hearing after the age of forty-five or fifty.

#### Safety and Health of Mill Workers

Swent: No, it was a terrible thing.

Curry: Now, I don't think they would put up with that.

Swent: You'd have to wear earmuffs.

Curry: They do that, but I think that it would require more than that.

Swent: In those days, you didn't wear any protection, did you?

Curry: No, you just stuffed a little cotton waste in your ear.

Swent: What about safety in the mills? Did you wear protective shoes or protective anything?

Curry: You wore glasses, safety glasses, when you were doing any work around the stamps, particularly when you were setting tappets or using a sledgehammer. Quite often, steel would fly off of those things. Gloves.

Swent: Were you using cyanide?

Curry: Cyanide in the cyanide plant, yes.

Swent: Was there any precaution for that?

Curry: Didn't seem to be any problem. I've never heard of anybody being poisoned in a cyanide plant. We were cautioned to wash our hands before we put our sandwich down on a cake of cyanide. [laughter] But, aside from that, nothing.

Swent: What about health care? Did you have medical insurance?

Curry: No, but later on, I think, after the war, the company built a hospital in Nevada City; called it Miner's Hospital. In fact, my youngest son was born there. And that was available to the miners for a slight sum of, as I recall, seventy-five cents a month that we had to pay into that. Our families got a family discount on their treatment. But for that seventy-five cents, we got our hospitalization, our doctor's requirements, and also prescriptions.

Swent: Before that, what did you do? What if there was an accident, for example?

Curry: Well, I imagine the company had a company doctor of sorts. Doctor Jones, I remember, was the person in Grass Valley that took care of any problems. I don't know what they did here in Nevada City.

Swent: You never needed any medical attention?

Curry: Well, yes. I put a piece of steel into my knee, one time. They did have a doctor here in Nevada City. He took care of all the requirements. Walker Reid, that was his name. A nice gentleman.

Swent: Well, you were at an age where you didn't have to worry too much about doctors.

Curry: No, all you needed was a few cough medicine pills, or syrup, or something like that.

Swent: All that shoveling kept you healthy. [laughter]



Curry: I guess so.

Swent: What about the war; were things closed down during the war?

Curry: Yes, the government shut things down. I was fortunate enough not to be drafted. I was a little old at that period of time--I was in my thirties. Involved with Frank McQuiston in a lot of strategic mineral work.

Swent: He came up here in the thirties, about the same time you did.

Curry: I think he was a little earlier than I was. He went right to work at the Empire, and I was at the Murchie, so we didn't meet until I went to the Empire to work.

Swent: And that was in--

Curry: In '33.

### The Getchell Mill

Swent: You were in contact with him from then on?

Curry: Yes. I split off at one time and went to work in Nevada for another Newmont operation at the Getchell. I spent almost a year there.

Swent: When was that?

Curry: That was in 1939.

Swent: That was a complicated ore, wasn't it?

Curry: That was very complicated. We spent a lot of time working on that in Grass Valley. In fact, I spent about a year sweating that one out.

Swent: Up here?

Curry: Yes. It was possible to make a decent recovery on that, but it took an awful lot of money.

Swent: What was the problem?

Curry: Well, it was just a refractory type of material. It was involved with arsenic.

Swent: What were you mining?

Curry: It was gold.

Swent: Gold, and arsenic.

Curry: Arsenic was very prevalent in the ore. It also had a lot of bentonite in the rock.

Swent: Bentonite?

Curry: Bentonite, which is a clay. That was extremely difficult.

Swent: Not chemically, but--

Curry: Physically.

Swent: Sticky stuff, isn't it?

Curry: It's sticky, and it absorbs water, and it tends to be just a nuisance.

Swent: I understand that's what they put in Wonder Bread.

Curry: Oh, really?

Swent: I think so.

Curry: I didn't know that. I may avoid that.

Swent: It stays soft for weeks at a time.

Curry: I didn't know that.

Swent: I think so. And it's used in candy, also. Chocolate candy.

Curry: Well, I guess it can't be too harmful.

Swent: I guess not. But it certainly must be messy to work with.

Curry: Yes. The Getchell had two types of ore. One was an oxide, which was easy to treat. And then, when they ran into the sulfide, well, they ran into this arsenic problem, and the arsenic present in the realgar and orpiment would vaporize. And as it cooled, it would condense into arsenic trioxide, which would come out of the stack and fall on the ground like snow. And of course, that's very poisonous and caustic. The rabbits, cats and dogs, and mice population were decimated.

Swent: What about people?

Curry: Well, the people avoided it. It was a little tough on the kids in the wintertime, when the snow was on the ground. They'd get their sleds out and sled through this stuff, and it would sort of slosh up on their faces and hands. And it would cause a few burns. So that was the bad part of that.

Swent: That was near Red House, I think.

Curry: Yes. Near Winnemucca.

Swent: But you were doing the research up here at Grass Valley.

Curry: That came later. When I came back from the Getchell, I went to work in a little mill--

Swent: I thought you said you were working on the ores.

Curry: I worked on the ores later on, in Grass Valley. When I went back to work there.

Swent: What were they doing there? They were roasting.

Curry: They were [roasted] going in, and followed up with cyanide. So they roasted the arsenic off, and then they cyanided the clinker, put that through a ball mill, ground it up fine, and then cyanided it.

Swent: They had to grind it before they roasted it also, didn't they?

Curry: No, they roasted it as a crisp material. I think they crushed that down to about three-quarters of an inch, and roasted that size.

Swent: And then ground--

Curry: Then ground that and cyanided it. And shipped the bullion.

Swent: Oh, the whole thing was there, then.

Curry: Yes, yes. Lock, stock, and barrel.

Swent: And you were over there for--?

Curry: Just under a year. I quit there, very happily, to get out of that place.

##

Swent: We're resuming after a little break. Have you thought of some things that you wanted to pick up from earlier?

Curry: Well, we could go back to the Getchell, and speak of some of the living conditions that we had.

Swent: Let's do.

Curry: I went out there in early December, and there was no place for my family, so they had to go back to her family in Berkeley.

Swent: Did you have two sons by then?

Curry: No, I just had the one, just Jim. And there was no housing available, so I was living in a bunkhouse. My bunkmate was a very congenial Mexican. They had quite a few Mexicans that used to come up there to work, and then, when they'd made a little money, they'd go back to either Southern California or Mexico. So this went on until about the first of April, when we found available a sort of an enclosed tenthouse, with a tin roof, tin sides, cold running water, no bathroom facilities. And we moved in there very happily, because we didn't like being apart. So that was our house for the duration of our tenure at the Getchell. Very hot in the summer. And I was working shifts, so Nancy and Jim, who was four, I guess, at that time, used to go out and sit in the car during the day so I could get some sleep. We made it.

Swent: How long were you there?

Curry: Almost a year.

Swent: In that tent house?

Curry: Yes. Well, it's better than nothing.

Swent: Part of it all. Where did you get your supplies from?

Curry: Supplies came in by truck from Winnemucca on a weekly basis. We'd receive an order and then send one back with the driver. The commissary had some things available. We could get small New York steaks for fifteen or twenty cents apiece, which we found were getting almost as boring to eat as hamburger. And occasionally we could go up and have dinner at the commissary. They had a special table for the staff.

Swent: Your Mexican friends at the bunkhouse, were these staff people also?

Curry: No, they were miners.



Swent: Miners. Were they trained when they came? Had they been in mining at all?

Curry: I think some of them had been, yes. They seemed to fit in very well. There was a whole crew of them, and the majority of them lived in a big wagon, like the gypsies used to. And this fellow was very happy when he could leave me and go back to join his friends at the circus wagon.

Swent: They did their own cooking, did they?

Curry: Yes, some of them.

Swent: And you ate at the commissary.

Curry: I ate at the commissary when I was batching, yes. That was probably some of the best food and the most food that I've ever had. Of course, that's one way to keep a miner, you know, is to feed them well. Yes, they really did; they served beautiful meals, and lots of it.

Swent: What were you getting paid at that time, do you remember?

Curry: I think that my paycheck for two weeks was a hundred and seventy-five dollars. Of course, our housing was practically for nothing. I think we paid four or five dollars for electricity, and that was it. No rent. But they had some pretty nice housing there, which they would build on a continuing basis, and they were quite adequate; they consisted of a bedroom, and a small living room and a kitchen, and that was about it. I think the managers and the superintendents were a little better off. They had more adequate housing, a little bigger, more rooms.

Swent: What was your title at that time?

Curry: I was just an operator in the cyanide plant.

Swent: What did they do for water? Was this a problem?

Curry: No, they found water down in some wells down in the valley. They had to pipe it several miles up to the plant, all uphill.

Swent: Were there any problems with this arsenic, any environmental considerations?

Curry: Yes, I think there were. It came about slowly. I heard later, after I'd left, that they'd killed a bunch of sheep upcountry from the arsenic. I went back there several times, once with Mac, Frank McQuiston. We always used to call him Mac. I think later on, it

became Frank, but he was always Mac to us. Mac was working on the metallurgy, and he instigated a large-scale plant test, where they rebuilt the plant according to his specifications on a jerry-built basis. And they ran it for about a week.

So I went back on that occasion, and stayed at the guest house. Mac was having a little problem with his eyes at that time; he had iritis, and I remember that he had to have penicillin shots a couple of times a day, and this meant going into Winnemucca. But it so happened that I'd been accustomed to giving shots, so I was made a nurse. So I'd slosh up from the plant a couple of times a day, in my muddy old boots and dirty hands, and get out the penicillin and the syringe and give him a shot. But he couldn't contribute too much to that test. He was laid up in bed, and was quite disappointed, I'm sure, but the test turned out pretty well. I don't know whether he was totally satisfied or not, but--that metallurgy was really rough.

Another little project that I had during the war was to develop the tungsten system at the Empire. They found some scheelite down at the bottom level of the North Star Mine, and Jack Mann, who was the manager of the Empire at that time, thought that if we could produce some of this stuff, we could get some relief from the War Production Board on a little bit more manpower, some supplies.

Swent: This was when War Production Board order L-208 closed them down?

Curry: Yes, this was when everything was shut up pretty tight. So they brought in this scheelite, which was very low grade. The whole thing was sort of a joke, I think, but we did produce a little bit, and got some results from the War Production Board, a little extra manpower. Copper wire, I remember, was one problem we had. Copper was in very tight supply.

Swent: This would have been about 1944?

Curry: In '43 or '44, somewhere in there.

#### Labor Conditions at Empire and Getchell

Swent: Were you still with Newmont when the Empire closed, when they closed it down?

Curry: No, I had left about two or three months beforehand, as a matter of fact. They got into some labor trouble, you know, at the Empire.

Swent: Do you know anything about it; do you want to talk at all about that?

Curry: Well, I know very little about it. The only thing I know is that the miners threatened to go on strike unless they got a pay raise of whatever magnitude. And, after a lot of negotiations, why, the management decided they couldn't hack it, so they shut it down.

Swent: Were there any labor crises with any of these mills that you were working in?

Curry: The Empire used to go through one about every two years, where the local union would threaten to strike. And management would pull in hay for the mules and stack it around the collar of the shaft, and bring in portable cots, put them in the office. And they'd put the staff to work. I got assigned the job of a hoistman at the North Star. I went through a training session where I learned how to run that monster. I did run that thing up and down for quite a while.

At that time, the North Star was pretty much shut down, but they were still maintaining the pumps. And they had two pumpmen that had to go down underground every night at eleven o'clock and pump out the mine on sort of an off-rate basis, when the power rate was favorable for usage. It was more economical for the mines to make use of this off-rate power, which power companies would allow between the hours of, say, eleven o'clock at night and six in the morning, when they had power available and they wanted to use it.

Swent: So they were only pumping during those hours.

Curry: That's right. Pumping and running the hoist and the compressors.

Swent: Were they still actually using mules in those days?

Curry: Up until the time of the war, they were, yes.

Swent: So it was critical to have hay for them.

Curry: Well, they had to eat.

Swent: Right. They stayed underground all the time?

Curry: They stayed down below.

Swent: So getting the hay down to them was one of the major things to do.

Curry: Well, they had to treat those animals with care; you never knew when you'd need them. And I think they were pretty much out of



business after the war. They brought them all up and put them out to pasture.

Swent: What was the union?

Curry: It was a local union called the Mineworkers Protective League. And they used to gather together once a month for meetings and have a little beer and pasties afterwards.

Swent: Did you ever join it?

Curry: They didn't allow us staff to join it.

Swent: You were always considered staff, even when you were shoveling the concentrates?

Curry: No, that was over in Nevada City, and they didn't have the union over there. And you didn't have to join. It wasn't something that you had to join to work. And they called themselves the Protective League, because, I think, their main duties were to supply comfort and aid to the widows and orphans of the miners. I think they handed out a small dole whenever they had the money.

Swent: Did they agitate at all for shortening this work week?

Curry: I think they did early on. I think when I first went to the Empire, the oldest millman there told me about how the mill used to work twenty-four hours, but only on two shifts. The night shift was fourteen hours, and the day shift was ten. And I think that the biggest strike effort they had early on, was to get that into three eight-hour shifts.

Swent: So that was a big accomplishment.

Curry: Yes, and when that was, I don't know. Probably in the early twenties.

Swent: At the time they closed, were they still working seven days a week?

Curry: The miners only worked two shifts. They only worked a day shift and a night shift.

Swent: But seven days a week?

Curry: No, I don't know whether they were working six days a week, or whether it was down to five. It seems to me they were working six days a week. Seven days was the mill and cyanide plant. And refinery.

Swent: This must have been one of the last places in the country to have people working like that, wasn't it?

Curry: Well, I don't know. I can only speak for this area around here.

Swent: It's surprising to me that in the late thirties, they were still working like that here.

Curry: The Getchell was the same way. They were working seven days a week. They only changed shift twice a month, so two weeks of graveyard was a long stretch.

Swent: Yes. And then the men just worked year in and year out without a break.

Curry: I think they could take one, if they wanted to, but they took it on their own time. I remember when the Wagner Act came into effect in the late thirties. It affected the hours during the course of the year, so that summer out at the Getchell, we were all laid off for two weeks, told to take a vacation. And I think it came at staggered times so that the whole mine wasn't off at that time, but I remember just shutting the door and going down to Berkeley for two weeks, and coming back. Going back on the seven-day-a-week stuff.

Swent: You got no pay for those two weeks.

Curry: No pay, no.

Swent: How did you feel about it?

Curry: I was happy to get the time off, but I missed the money. Well, times were tight in those days. The war was just beginning to take effect. We hadn't joined the war effort yet, but the labor was getting bad. People were leaving the mines and going to work in the shipyards and the war industry. I remember the welders would come through looking for work, and they'd just stay long enough to get a little money and then they'd head off for the Bay Area.

And the prices were going up all the time. The Getchell wasn't always such a profitable mine, either. The recovery wasn't all that great. The value wasn't all that high, so they were struggling along. So they weren't about to give anything away.

Swent: But it's hard to get workers in a place like that, I would think.

Curry: Well, most of them were still local. They came from Winnemucca and Salt Lake City, Elko.

Swent: Except for the Mexicans.

Curry: Yes.

Swent: Were they paid the same as the Americans?

Curry: Yes, yes.

Swent: Straight pay scale. It didn't vary.

Curry: No. So, that's the Getchell.

#### Metallurgist at the Empire

Curry: We spent a lot of time during the latter years of my tenure at the Empire as metallurgist in charge of what was going on in those days, the refinery, mill, cyanide plant. Browns Valley was active on and off. Zeibright up in Bear Valley had been shut down, but I was in charge of all the records of the mill and cyanide plant, such as they were.

We instituted an acid-treating system in the refinery, which was quite helpful, I think. Mac started that up, and I carried it on. We would acid-treat the precipitates to get rid of most of the copper and the zinc. The Murchie was a contributor of the copper. That came along with the concentrates. Of course, that had been shut down by that time, but there was residual copper in the Empire ore, and the zinc was added at the cyanide plant to precipitate the gold.

Swent: Did you mingle all the concentrates that came in from all these different places?

Curry: Yes. We had quite a custom business going, too. During one of the labor problems they had at Selby Smelter, they shut the thing down, and a lot of these little mines around the area were lost as to what to do with their concentrates which had been shipped to Selby. So we got some forms together and figured out a cost basis and I toured the Mother Lode for a couple of weeks, trying to round up business, going from east of Oroville down to Mariposa.

Swent: Did you get a lot of customers?

Curry: We didn't get a lot, but we kept a few coming in all the time.

Swent: Was this an extra problem for your record-keeping? Did you try to keep their records separate from yours?

Curry: We sampled them separately, and after it was sampled, it all went in together.

Swent: How did you pay them?

Curry: We paid them on the basis of the assay value.

Swent: Coming in?

Curry: Yes.

Swent: Did they sample and you sampled too, and you had a referee?

Curry: No, they didn't really sample, at least to my knowledge; they would accept our sampling. They were always on the job when we sampled, and they'd get a cut of the sample and they could do whatever they wanted with it. But, no, we didn't ever have any serious disagreement.

Swent: So you then just paid them on the basis of what the sample showed they had? You paid them money?

Curry: Yes, paid them so much a ton for treatment, and then so much of a percentage of the recovery. All this stuff had to be treated, sampled, and tested beforehand, to make sure that we could handle it.

Swent: Yes, if it was a different kind of ore, you couldn't just throw it in.

Curry: We threw out a couple of them on that basis. They just weren't acceptable.

Swent: And you were refining up here as well?

Curry: Yes.

Swent: So you were in charge of the refinery.

Curry: I was in charge of that and I spent some time earlier on in the actual operation, which was a nice hot job. The mill crew retorted all their own amalgam, and I handled the precipitates from the cyanide plant, with a helper. And that was a pretty steady job, too.



And then all the bullion--there were three types of bullion. There was a copper bullion and a cyanide bullion and a mill bullion. The mill bullion was all mostly free gold, stuff that they accumulated out of the batteries and on the plates. And that was fairly high grade; that stuff was 85 percent gold. The cyanide bullion went anywhere from three hundred fine to six hundred fine. The rest of it was silver, mostly, a little bit of copper. And the copper bullion was anything that went below three hundred fine in gold. The mint wouldn't accept anything that went under three hundred fine, so it all had to go to Selby.

Swent: When they were closed, what did you do?

Curry: Well, I'm not sure that that part of the refinery was closed. And another reason is, I don't think we were making copper bullion at that time, either.

Swent: You ended up with bars, then?

Curry: Yes, they went to the mint.

Swent: Directly from here to San Francisco?

Curry: Right. By train, when it was in operation. The stuff was all sacked in canvas sacks and sealed with sealing wax and labeled. And Mr. Fred Nobs, who was the manager, would put a pistol in his belt, load them all in his car, and away he'd go, down to the express office. From then on, it was the Railway Express responsibility.

Swent: The manager himself went with it?

Curry: Yes. Well, just as far as the station.

Swent: Yes, but it was his responsibility.

Curry: He wanted to make sure it got there.

#### Friends and Social Life in Grass Valley##

Swent: Speaking of Fred Nobs, is there anything interesting to say about him?

Curry: Well, he's an awfully nice man. I don't know of anything specific.

Swent: He had a lot of parties, didn't he?

Curry: Yes, we attended a few of those before a dance, or something like that. They'd open up the dining room of the old Bourne mansion up there, and gather six or eight couples and have a high old time.

Swent: Was Mann his successor?

Curry: Yes, yes.

Swent: What about the dove stew?

Curry: I went to a couple of dove stews.

Swent: Bill Fuller told me that he met you at a dove stew.

Curry: That's right, he did.

Swent: And he said to be sure and ask you about dove stew.

Curry: That was a high old time that the sportsmen used to put together. The Grass Valley Sportsmen's Club. I think they still have it, but it isn't like it used to be. The club members would go out and shoot the doves and then the wives would get together and they'd make a big stew out of them, and then they'd have a big get-together down at one of the local parks. They were pretty hilarious affairs; there was a lot of happy squareface going around and liquor and all that. Some of them wouldn't know whether they were coming or going. But it calmed considerably after the mine shut down.

Swent: Yes, I'm sure.

Curry: When did you see Bill Fuller last?

Swent: Oh, I haven't seen him for a couple of years. I talked to him on the phone.

Curry: I saw him last, I think, about two or three years ago up at Redding. We had a retirement party for one of the old staff members, and he came up for that. Nice guy.

Swent: Yes, very nice. There was another thing I meant to ask you, too. Did you work for Alpha Hardware?

Curry: No. My son Jim did. During school, he used to work there on Saturdays, or after school.

Swent: Following the family tradition of working at a hardware store?

Curry: I guess so. I guess so, yes. He worked with Downey Clinch, Charlie Strohm, Bill Briggs, Roy Tremoureux.

Swent: The hardware people are pretty important in a mining town.

Curry: Yes, Alpha was. It had a branch store in Grass Valley, and another one in Alleghany, and they were suppliers of powder and steel, fuses. Fred Cassidy was one of the owners.

Swent: What about suppliers; were you visited by salesmen?

Curry: Oh, yes, yes, we had machinery salesmen and chemical people.

Swent: Were they a source of any information to you?

Curry: One of them was a very important person. I don't know whether Frank McQuiston mentioned his name or not, but Otto Brown was a field engineer for the American Cyanamid Company. A very nice person, a great help to me in solving some of my problems. He traveled all through the western part of the country; I think he covered southern Oregon and California and Nevada, and probably part of New Mexico, but he was always available when you needed him.

Swent: So he was a consultant as well as a supplier?

Curry: Yes, and he didn't worry about getting his hands dirty, either. He'd put on his jeans and his old shirt and then dive into a flotation machine. Just a great person. Poor guy died at an early age of leukemia, and we all missed him.

Swent: Who were some of the other people that taught you along the way?

Curry: I think I probably picked up something from almost everybody, but Frank and Otto Brown, I think, were the main people.

Swent: I think it is very interesting the role that these suppliers played in spreading information from place to place; they were educators as well as salesmen, weren't they?

Curry: We had a local foundry that supplied us with molds for bullion bars.

Swent: What was that?

Curry: It was George Brothers Foundry. It's still in operation, although I don't know what they're doing; certainly not supplying the mines. Grinding balls and various castings, whatever were needed, liners for ball mills.



Swent: Did you use steel balls or iron balls?

Curry: Steel and iron both, yes. They put those in the ball mills.

Swent: Never got pebbles?

Curry: Never got pebbles. Those went out, I think, early on. They weren't all that great, either. I think that most of the early pebbles came from Denmark as ballast in ships. Where did you tie up with Parry Wagener?

Swent: I have just known him around Piedmont. His father-in-law, Fred Greenlee, is one of our neighbors.

Curry: Oh, is that right? I think Parry was a fraternity brother of Jim's.

Swent: Yes.

Curry: Nice person.

Swent: And Parry's wife is an Oliver. That is, her maiden name was Greenlee, but her mother was an Oliver.

Curry: I see. They're prominent Piedmont people.

Swent: Yes, and also very interested in mining. I was chatting with Parry at some party and mentioned what I was doing, and he just was very much interested, immediately, and said I ought to talk to you.

Curry: Nancy's sister-in-law lives in Piedmont. Up on Monte. Do you know where Monte is?

Swent: Yes, I certainly do. Who is her sister-in-law?

Curry: Virginia Sherwin.

Swent: I know that name; I'm sure I've met her.

Curry: Nancy's brother, Dave, died about five years ago, I guess, and she's been a widow ever since. But she has friends and family, and she moves around. Nice area.

Swent: Yes, it is. Do you get down there to visit very often?

Curry: Not too often. We don't move around too much. We used to travel a bit, but that's getting a little bit hectic, too. Besides, I'm getting to the point where I'm so old, they won't rent cars to me

anymore. [laughter] And I don't like to travel in groups; I don't care much for tours.

Swent: There aren't so many places any more that are so attractive. A lot of places that are ruled out now, that you don't want to go to.

Curry: We've traveled through Europe a bit, and I have a Scotch background, so I dearly love to go to Scotland.

Swent: Of course. Do you have connections with family there?

Curry: No, a few friends that I've picked up along the way.

Swent: But they welcome you when they hear your name, don't they? That's nice.



"The Gold Dust Gang," Empire Mine Refinery, 1938. James Curry, Sr., Joe Kashatus, John Lewis, Alan Larue.



George Oyung, Virgil Angove, James Curry, Sr., representing 108 total years of service with Newmont Mining Corporation. Miners' picnic, Empire Mine grounds, 1980.



## III WORKING FOR CALAVERAS CEMENT COMPANY, 1956-1975

Curry: We haven't talked much about Redding.

Swent: No, we haven't gotten to Calaveras Cement Company.

Curry: You want to hit that one?

Swent: Yes, let's just start with San Andreas.

Curry: Well, San Andreas was rather short, three and a half years. Grant Metzger, of course, got me down there.

Swent: How did that come about? How did you know him?

Curry: Well, he used to work for the Alpha, too, at one time. I guess I knew Grant and his wife through friends.

Swent: You had quit working for Empire just before they closed.

Curry: Yes. And I was headed back to Connecticut, as I told you, and I don't know whether Grant heard about that or not, but he called me and asked me if I wanted to go to work. He was plant manager at the San Andreas plant. Later he was transferred to San Francisco as vice president of production for both plants.

Swent: You didn't want much to go to Connecticut.

Curry: Didn't want go to Connecticut. Jim was here going to college, my mother was still alive in Berkeley, so I didn't really want to tear myself away.

Swent: Your younger son is much younger than Jim, isn't he?

Curry: He's nine years younger.

Swent: I see. So he was also in school?

Curry: He was in school here in Nevada City, and we pulled him out and he went into the eighth grade in San Andreas.



Swent: What is his name?

Curry: David.

Process Engineer at San Andreas

Swent: What sort of job did Grant Metzger offer you?

Curry: He offered me a job in the plant as a process engineer. And that's the job I had the whole time I was there until they sent me up to Redding as project manager when it came to building their plant up there. San Andreas was a nice change for me; I enjoyed it. It's similar country, quite a bit smaller.

Swent: The other end of the Mother Lode.

Curry: Yes, almost. Well, southern end of it. Southern mines, as we called it. So, after three and a half years, we went up to Redding.

Swent: Did you have any contact with the Mein family?

Curry: Of course, Mein, Sr., was the president at that time, but pretty much retired. He had a son, William Wallace, Jr., who was in San Francisco. We didn't really have much contact with them. They stayed in San Francisco; we stayed in Redding.

Swent: They didn't go out to the field very much.

Curry: No, well, just once in a while; they'd send some of their crew up from the city office. I knew Grant's boss was Morgan Barker, who was plant manager at San Andreas before Grant was. I've known him for quite some time. His family, I think, came from Nevada City. In Redding, I rented a motel room for an office.

Swent: You were building a new plant, then. And you were in charge of the construction?

Curry: Yes, yes.

Swent: How did they happen to decide to build a plant up there?

Curry: I think they wanted to expand; the market seemed to be looking pretty good; there was a lot of construction work in the offing. We furnished the cement for a number of dams in the area and all that highway work that went on, plus the normal construction.

Swent: How far can you ship cement?

Curry: That's a strange question, because I could never understand the shipping policies. We'd ship most of it by rail, or a lot of it by rail, to Reno, to the Bay Area. There was a plant in Nevada that was shipping cement by rail to Sacramento. And taking it by truck clear up to a job near Eureka, and that seemed rather strange to me. Permanente Cement Company in the Bay Area was shipping cement right past my front door in Redding to a dam project up at Shasta City. So it's sort of a trade-off, I guess you'd call it.

Swent: Whoever gets the bid.

Curry: Yes, and as far as distance is concerned, it doesn't seem to matter. There were also customers that had their own trucks that were bypassing our transfer plant in Fremont and driving clear up to San Andreas and picking up cement. I guess they felt they had to keep their trucks busy. Strange way to do business, isn't it?

Swent: You shipped from San Andreas by truck down to Fremont?

Curry: No, that went by rail.

Swent: By rail from San Andreas to Fremont. I didn't realize there was a train in San Andreas.

Curry: Yes. They ran a train line to Stockton, then from Stockton they ran a line to the Pardee dam that the East Bay Municipal Utility District was building.

Swent: Were these rail lines that you built yourself?

Curry: We didn't build them, they were Southern Pacific. And then from the dam, they put in a spur up to San Andreas for the cement. And that dam, I think, was built in the early or in the mid-twenties sometime, and I wouldn't be surprised if the plant at San Andreas was built on the assumption that they were going to get the cement for that job.

#### Project Manager at the New Redding Plant

Swent: So, the Redding choice, you had nothing to do with this decision. You went in after that.

Curry: They went in early in 1957 and did some exploration, put in some drill holes on the deposit. And then, in one of these cycles of



depression, they let it go; they dropped everything and came back to San Andreas. And then when the economy picked up again in 1959, they decided to give it a go, and that's when I went up there. Cleared out the manzanita and the rattlesnakes, and put it together. Very interesting. At that time, Redding wasn't really much of a town; it had a population, I think, of seventeen thousand. Now I think it's up around forty or fifty, considering the suburbs.

Swent: Did the plant have anything to do with this growth?

Curry: Oh, I don't think so. I think it just grew like the rest of the state did. It's a nice area, except for the weather.

Swent: It's very hot.

Curry: It's hot in the summertime. Winters are not too bad, but it's a beautiful country surrounding it, so that attracts a lot of people up from southern California and the Bay Area. We had all sorts of people looking for jobs that came up from Los Angeles.

Swent: No problems hiring then.

Curry: No, no. Problem was, they didn't think we were hiring enough.

Swent: What's involved? Did you have to plan the quarrying, the mining, as well as the processing?

Curry: I was involved in it, but we had experts that did most of that. Some outside firms were consulted. A lot of the planning was done in San Andreas, as far as the equipment was concerned, what type of equipment.

Swent: You used things that were similar to what you'd used there?

Curry: No, it was a different style plant, entirely. The San Andreas was a wet-type plant where the raw materials were ground up in water as a slurry, and then introduced into the kilns as a thick, gooey mud, whereas in Redding, where we have lots of rainfall, and it's hard to keep things dry, we decided to go to a dry-type plant. So it was rather difficult some times of the year; we get an awful lot of rain up there. I think sixty inches a year is average. One year, one wet year, we had over eighty. Fortunately, we were on the top of a hill, so all the water ran off.

Swent: That's a lot of rain; I didn't realize there was that much up there.

Curry: And it all comes, you know, in a matter of three or four or five months.

Swent: Was this underground mining?

Curry: No, surface, quarry.

Swent: So rain is a problem.

Curry: Yes, it was, but we kept going, most of the time.

Swent: And is your plant outdoors, or is it all under a roof?

Curry: No, it was pretty much enclosed, except for the kiln; that was outside. But the storage was all under cover. The only problem we had was in mining some of the more gooey stuff during the periods when it wasn't raining.

Swent: Do you mine several ingredients?

Curry: We had two quarries; we had a limestone quarry on one side of the highway, and a shale quarry that supplied the other ingredients on the other side, so we'd move back and forth.

Swent: So they were near each other, adjacent, then.

Curry: Yes, fairly close; a couple of miles apart.

Swent: This would be quite fortunate, I would think. Is that what you look for when you're locating a cement plant?

Curry: That and a source of fuel. Fuel's a big item, too.

Swent: What did you use?

Curry: Oh, we started out on crude oil until the PG&E [Pacific Gas and Electric] built us a gas line from around Red Bluff. They put in a thirty-mile line for fuel. They were looking for customers in Redding and Red Bluff, too.

Swent: Was this the first gas that had come in there?

Curry: Yes, yes. So we instigated that; I think we paid for part of it, too.

Swent: Probably. Did you have anything to do with that negotiation? You didn't work on that at all?

Curry: No. That was all done in San Francisco.

Environmental Problems: Dust, Vibration, Noise

Swent: Were there environmental problems?

Curry: Yes, there were. There was quite a bit of disagreement in the community. Early on, they had the copper smelters up there, you know, during the First World War, that killed all the vegetation for miles around. So we had that picture to battle; they were afraid that we were going to do similar damage. And, of course, we also had dust problems; you can't help it in a quarry like that. And we raised a little bit of dust down around the plant, too, which got to be sort of a problem. We had to meet certain specifications, and they threatened to shut us down once or twice, but we managed to forestall it each time.

Swent: Who is "they"?

Curry: Oh, "they" is the Shasta County Air Pollution Control Board District.

Swent: Did they monitor you?

Curry: Yes, yes. They were very lenient to begin with, and then as time went on the whole industry in the area, the loggers and the smoke and the soot and the cinders all got worked over, including us. But they're still operating.

Swent: So what did you do, just change your methods?

Curry: On the obvious problems, we put in equipment to handle it. Such as dust collectors. And, later on when they enlarged the plant, about ten years ago, they put in a different system entirely, which did away with a lot of that problem.

Swent: Were your trucks a problem? Did anybody complain about those?

Curry: No, not particularly.

Swent: Your roads were paved?

Curry: The roads were all paved. No, the trucks were not a problem. We had a little trouble with blasting, early on, because people weren't accustomed to that sort of racket. We bought a few windows, and somebody wanted me to repair their swimming pool, but I got out of that one by saying that they didn't build it correctly to begin with.

##



Swent: What did they claim, that the blasting had damaged the pool?

Curry: Shook the ground and opened up some cracks. It wasn't really that bad. I did break a fishbowl--one of these large aquarium-type fishbowls that a neighbor had. I think that we probably did break that one with a concussion. About two years after the plant was built and in operation, somebody decided to build a trailer park about a quarter of a mile downwind from the plant, and that was a source of a lot of complaints.

Swent: But they located there after you were.

Curry: Yes, yes. It's sort of like building your house alongside of an airport. They seem to know what's going to happen, but they do it anyway.

Swent: There were complaints about the noise from the blasting as well as the vibrations, then.

Curry: Yes, the noise and the vibration. And, also, we made a little noise around the plant, too. I remember we'd load most of our rail cars at night, and the crew would go out and bang on an empty car, you know; it was like hitting a drum. So I got several calls in the middle of the night about, what can we do about this noise?

Swent: How far from the plant did you live?

Curry: I lived in town; I was fourteen miles away, so I missed that. We also had a system of shooting out whenever the kiln needed repairs on the brickwork inside. We had a cannon that would shoot a lead slug maybe about an inch in diameter. It was really a shotgun mounted on a carriage, and it was a ten-gauge barrel, and we'd fire these things into the kiln and break up the coating so we could get into it.

Swent: Is this something that's customarily done?

Curry: Yes, I think so, on that type of machine. But it made a terrific amount of noise, and the obvious time for us to do it would be the middle of the night so we'd have everything ready for the day shift when they came on at seven o'clock. So this was a source of trouble.

Swent: Yes, I would think so. What size kiln was it?

Curry: It was three hundred and sixty feet long and twelve feet in diameter.

Swent: A long tube on the ground?

- Curry: A long tube raised up on supporting rollers that the cement would go through in the process of being converted to clinker.
- Swent: In this case, it was wet when it went in?
- Curry: No, in Redding, it was just dry. In San Andreas, it was wet. The process consisted of heating this thing up to about thirty-five hundred degrees Fahrenheit, which changed the whole chemical composition and created what we call cement clinker.
- Swent: And then this builds up on the inside of the kiln?
- Curry: Part of the process is to get a coating inside so that it will protect the brickwork, because the brick would only stand so much heat. And when the coating would fall off or wear out, then we'd have to go in and shut the kiln down and, after it cooled down, go in and replace the brick.
- Swent: And when were you shooting the gun?
- Curry: That was prior to shutting the thing down completely, after the fuel had been turned off and allowed to cool. As it was cooling, then this coating would be shot out. We'd get a coating building up in the kilns at the Getchell, too, but they didn't have a gun at that time, so they have a bar that they would put in there and sort of scrape it out as it went around. That was sort of a miserable procedure, too.
- Swent: You did this by hand?
- Curry: Yes, that was quite the way to do things. I remember seeing a plant down in Southern California where they were doing this, and the only trouble is, with their plant they had a series of water tubes at the end where they were generating hot water for a power plant. And, occasionally, a missed shot would go clear up the end of the kiln and rupture one of those tubes. Then they were in real trouble.
- Swent: Did you have any sort of waste that was a problem or challenge?
- Curry: No, no.
- Swent: You don't have water draining out?
- Curry: Any water we used, we recycled. The only supplies that we were required to get, besides our rock, was gypsum, which we got from Nevada by rail. Of course, one of our real raw materials was natural gas. At that time, our PG&E bill for gas and electricity



was running around a million dollars a year. Can't remember how that breaks down, but gas was a large part of it.

Swent: I was told recently that at one time you used rice hulls from the local rice mills to provide silica for your plant. Is that true?

Curry: This effort turned out to be mostly experimental. The rice growers in the valley found that they could no longer burn rice hulls because of air pollution restrictions. Our clever young plant chemist at the time, Bill Siemering, now plant manager, came up with the idea that by introducing rice hulls into the kiln during the burning process, a savings in gas fuel would result. At that time the cost of natural gas was rapidly increasing, rice hulls were free; in fact the suppliers were so happy to get rid of them that they paid the cost of delivering them to the plant at first.

The savings in fuel costs were substantial. However, it didn't take long before other users learned of the benefits of this low-cost fuel. Being a very lightweight material, the cost of transporting large quantities of hulls became a factor, and as others became attracted to its use as a fuel, the suppliers added a cost. Why not?

The rice hull ash did contain a fair amount of silica; however, the volume of ash was relatively minor but it contributed to the mix and was welcome. As I mentioned earlier, the use of rice hulls turned out to be largely experimental, but it pointed the way to other methods of saving money.

As the cost of fuel is such a large part of the total cost of producing cement, the plant made use of almost anything that would burn. At various times, after I retired, coal was railed in from Colorado and Utah. Wood chips from local mills and chunks of old rubber tires were used, along with the regular use of gas or oil.

### Labor Relations

Swent: Gypsum reminded me that your union was the Gypsum workers--they called them the Gypsies?

Curry: Yes, they called them the Gypgies. [laughter] Cement, Lime and Gypsum Workers of America.

Swent: What about them?

Curry: We got along pretty well with them. We'd go into labor negotiations every two years and usually wind up giving them everything they wanted, which I think was too bad. But our management back in New York didn't want a strike, so you didn't have much choice but to bargain as best you could and hope for the best.

Swent: You, as the manager, were the one who did the negotiating.

Curry: I was part of the team. I think Flintkote had their own people that would come around, and also Grant Metzger was pretty much involved. And the rest of us would just try our best to beat off some of these unrealistic demands that were made. So they did pretty well. They got all sorts of concessions that I would hesitate to give; that's why I probably got gray so early.

Swent: What sorts of things?

Curry: Oh, they got all sorts of medical and dental help, which is the normal thing these days. They'd also get the share of their working clothes, their shoes; I think they got two pairs of shoes a year.

Swent: These were special?

Curry: Some of them were; some of them were pretty good dress shoes, I thought. They also got wage concessions, primarily, which is normal.

Swent: They weren't working seven days a week for four dollars a day.

Curry: No. [chuckles] And then they'd get concessions when they switched jobs. I always thought that if a man could work a number of jobs, why, it would be less annoying, less boring. But if we took a man from the quarry and put him down in the plant work as a relief man, this took a certain concession in wage. Of course the wages were all automatic. They'd get whatever the job required. But in doing that, he'd also get a little extra for having to suffer the consequences of making this move. Even if it was for a day.

Swent: Was this because they really did not want to move?

Curry: No, I think it was just a matter of getting more money out of the company.

Swent: The workers weren't complaining about having to move?

Curry: No, no. In fact, I think they liked it. They liked it especially when they could get a little bonus for it, too.

Swent: Are there many various jobs around a plant like that?

Curry: Yes. The unions had it broken down into a series of jobs depending on what skill was required. The highest paid man was the shovel operator up in the quarry, who had to be a little smarter than the rest of them, I guess. It worked its way down through the various plant operators and the chemists and the laborers. We even had a gardener I think at one time for our guest house, and his was a special category. And of course when it rained, or when the wintertime came, you couldn't use him as a gardener, so we had to transfer him into the plant and he got the plant scale for the job he was doing, plus this extra bonus for moving.

Swent: And when he moved back to gardener, he again got a bonus?

Curry: Yes, same thing. So it was a vicious cycle. I think the unions have to keep themselves active by proposing these things.

Swent: You mentioned the guest house. What about this?

Curry: Mr. Mein, Sr., always thought that a plant should have a place for the visiting managers and their personnel to stay. I think this was a part of his African experience, where he would travel from one mine to another and not want to be too much of a problem for the manager. They had a guest house at San Andreas, too. It was an old stage house called Kentucky House, and he thought that was a great idea. And the sales department got good use of this for their entertaining customers. So we had one built in Redding. It came in very handy during construction, because we could house a lot of the experts that came up to help us at various phases of the operation, construction. And if anything went wrong in the middle of the night, all we had to do was run up to the guest house and roust him out of bed.

Swent: It was an additional thing for you to run, however.

Curry: It was, yes. I had a full-time housekeeper and a cook, same person. And we kept it pretty busy; as I say, the sales department had it busy on weekends. They'd gather a crew together and come up and entertain them and play cards, take them out golfing. It was a nice thing to have. I got some use out of it, too. I could invite people in from town that I thought would be helpful to know better and feed them lunch, and have a few dinners. Nancy was president of the Easter Seal Society, and she had a couple of her meetings out there that made quite a hit with the townsfolk. It was a beautiful building.

Swent: You built it?



Curry: Yes; well, it was part of the construction. It had six bedrooms, could sleep twelve people; sometimes there were more and they had to sleep on the floor. [laughter] But they still get some use out of it; I think it's still in use.

Swent: When did the change to Flintkote come about and why did that happen?

Curry: Well, I'm not sure of the ins and outs of this, but Calaveras was a privately held company for a long time, mainly by the Meins and their family, and I think that they decided that when anything happened to Mr. Mein, they'd have a big tax problem on their hands; so they traded shares with Flintkote.

Swent: Was this before you went to work for them?

Curry: No, this was just about the time I went up to Redding. And then Flintkote took over from New York and they ran it for many years and then they finally sold out to a Canadian company. And I don't know how the thing is split up today.

Swent: You were actually working for Flintkote then after a while.

Curry: Yes. Flintkote wanted to change the name; they wanted to phase out the word Calaveras, which is an old Western trademark, you know. But now I understand that under this new company they've gone back to Calaveras.

Swent: That's what I understood. Kennecott is also keeping the name Kennecott, after a change; they dropped it and came back, and Calaveras is back, also.

Curry: Yes. I think that's nice; I think a company should retain its origin somewhat.

Swent: I certainly do, yes.

Curry: Flintkote, of course, wanted to get everything under its banner, which is understandable. They had many things going with the sand and gravel and the roofing and the Orangeburg Pipe and other things.

Swent: You mentioned clearing out the manzanita and the rattlesnakes--it was all just empty ground when you went out there, then?

Curry: Yes.

Swent: And you started the quarry and the plant and everything?

Curry: Yes. The plans were pretty much put together. I just had to stick around and see that things went on.

Swent: Did you have to build the staff?

Curry: Well, some of the minor staff, I did. We had a number of people that came up from San Andreas. We offered them the opportunity to get into something new, and we got some very nice people; I was very happy with the majority of the people.

Swent: How many did you have? Was it a big staff?

Curry: The complete staff?

Swent: Did you have a large operation?

Curry: We had a total of about a hundred and twenty to start with. We were able to cut it down a bit as we got going. Flintkote kept urging us to cut our costs, and we'd have to cut people. And the plant, I think, suffered a little bit from that. Some of the development didn't go along as fast as I would like; some of the maintenance was deferred. Bad.

Swent: Yes, that's always bad. But a lot of your laborers you hired there.

Curry: Yes, yes. Most of the labor force was local.

Swent: And were you given autonomy to make decisions? You didn't have to do things the same way they did in San Andreas?

Curry: Well, big decisions always had to be made through corporate headquarters. That meant going to San Francisco, and San Francisco in turn would have to go to New York. So things got sort of waylaid that way. There was an awful lot of paperwork involved. And then as government got itself involved in things, that was more paperwork. We had forms to fill in for the government, the city and the county and the state. I remember I had to file three water plans for what we did with water. How we used it, and how much.

Swent: This was for the city?

Curry: No, the city wasn't involved; it was the state, county and the feds. And they were all practically the same, but there was just a little bit of difference that had to be cranked into each one.

Swent: This was before the environmental impact reports, however, wasn't it?



Curry: Yes, yes. Those came in a little later, too, and every time we had to make an addition or a change, you had to file an environmental plan.

### Community Relations

Swent: I assume that quite a little of your job involved what you'd call community relations.

Curry: Yes, there was quite a bit of that. I felt that I should join every organization that they had up there, including the United Crusade and Chamber of Commerce.

Swent: You mentioned Easter Seals and Nancy.

Curry: Easter Seals, Nancy was in. I don't play much golf, but I got involved in the golf club on their board of directors. The Rotary Club board of directors, Rotary Club itself. I was thinking of that the other day. I remember one of the requirements that the city office wanted to know was what we were doing to put forward the image of Calaveras Cement Company. So I had to go through all this whole list of things that I had been in. Toastmasters, I had to be in a Toastmasters. Anything that presented your image to the community. And it wasn't all that hard.

Swent: I imagine you enjoyed it.

Curry: I did, some of it. Some of those late night meetings sure got to be a little boring. The County Community Action Committee was one that was particularly trying.

Swent: Was this something that you volunteered to be on?

Curry: Well, I volunteered through the Chamber of Commerce. And that met I think once every two weeks; usually wound up in a hassle between various groups that were concerned with it. Why they couldn't get more money and all of that business.

Swent: This was a Chamber of Commerce activity, then?

Curry: I represented the chamber on it; it wasn't a chamber activity.

Swent: It was a county committee?

Curry: Yes, I guess the county sponsored it. I remember the board of supervisors were on it, as well as the Chamber of Commerce, which I

represented, and various other groups. Some church groups. You get a mob like that together and there's always a lot of dissension.

Swent: You didn't get involved in politics very much; that is, party politics.

Curry: No, I think that the company would just as soon I didn't, as a matter of fact, unless I did it quietly on my own.

Swent: There must have been considerable political action that you had to do.

Curry: Well, there was a lot of it that we would like to have been involved in, but that gets to be troublesome when you get involved in one party and the other party feels that they are being snubbed.

Swent: Did you ever have any pressure from politicians to?

Curry: No, no.

Swent: Regulations, or something like that?

Curry: No, not really. There was a judgeship, I remember, that came up that we were particularly involved--not involved in, but one where we would like to see one candidate over the other. And I remember requesting some financial support for this particular man and people in San Francisco said, better not, better stay out of that. So I think I presented them a little money on my own to make sure the candidate knew that we were on his side.

Swent: What about taxes; were you threatened with taxes at all?

Curry: Yes. Our county taxes, when I left there, were running a thousand dollars a day. And I felt, somehow, that we were being harassed by some of the county people, particularly on the environmental side of things. But that was a fact of life. We just paid our taxes along with everybody else.

Swent: You didn't try any political action?

Curry: Well, not politically, no. We met with one of the boys from San Francisco and I met quite often with the county assessor to try and convince him that we shouldn't be taxed as much as we were. And he was quite acceptable to some of these suggestions, particularly when we were starting up. We weren't making any money, we were still building up a business and we didn't feel that we should be taxed full bore for the total sum. And he said, that's agreeable, and he shaved the taxes a little bit for the first five years.

Swent: He was able to do that?

Curry: Yes. He pretty much has control over how he runs the taxes. They base it on your inventory and your sales and all that stuff. We had a lot of inventory, but not very many sales at that point. Fortunately, they were able to pick up. We ran out of cement several times during the course of a year when we just didn't have enough to go around.

Swent: Why?

Curry: We weren't able to produce it in order to keep up with the demand.

Swent: Because of limitations of your plant?

Curry: Yes. We only had so much that we could make at a time, and when the sales department wanted us to make more, we just didn't have it. But they finally got around to expanding that; later on, just after I left, they rebuilt the whole plant, practically.

Swent: You were speaking, earlier, about the cycles. Some of them you can predict, but some, apparently, you can't.

Curry: The cycles for us are breakdowns, which we can't predict. And, of course, if you have a serious breakdown, then you're not making cement. And that happens; these things aren't expected, some of them. And then the economic slowdowns, of course, you can sort of foresee them.

Swent: Can you?

Curry: Yes, you can sort of foresee these things. They're talking about a slowdown in our economy now, and you can sort of adjust to that, put it in a crystal ball and hope you're right.

Swent: But you were basically just producing all you could all the time.

Curry: Right. Yes, we were. We'd build up our inventory in the winter months, and then, on it, we'd go about three months in the summertime; and then from there on, we were just going from hand to mouth.

Swent: Did you have to provide housing for your workers?

Curry: No, no.

Swent: Redding was able to provide everything?

Curry: Oh, yes, Redding could handle it.



Swent: Or nearby. You said you were fourteen miles out.

Curry: Our home was fourteen miles. I lived about two miles on the other side of town, so Redding was about twelve miles. It was an ideal location; we were right on the highway, right on the railroad, a mile from Shasta Lake. Used to take our lunches up there in the summertime and sit down on the banks and throw rocks in the water.

Swent: You were in just one county?

Curry: Yes, Shasta County.

Swent: Shasta County, so you didn't have to worry about more than one county, anyhow.

Curry: No, no, fortunately.

#### Acquiring Land and Claims

Curry: Our property was on Forest Service land, and that was a little bit of a problem for a while. I think they've got it all straightened out now.

##

Our powder magazine was on Forest Service land. And we wanted to see if we couldn't make a trade with the Forest Service for some of our unused property for that right of way. And that thing dragged out for years, that trade. Every time we thought we had something going, they'd get a whole new personnel group in the Forest Service office, and they'd have to start all over. But it wasn't much of a problem, except for the uncertainty of it all.

Swent: You had actually bought the land where you were.

Curry: Yes, yes, all except for this piece that I was talking about, which consisted of a hundred acres, or something like that, sizeable.

Swent: Eventually, you did trade?

Curry: It was going on when I left, and I understand since then that they've gone through the motions of making adjustments and things. And I believe that they've probably got it by now.

Swent: Were you involved in acquiring the land?

Curry: Part of it. We went up and some of this land was open for posting claims, and we had a big claim posting time, at one stage of the game, when all of us went out and put our claims on the little tobacco cans on the property. And we eventually got some of those patented. The rest of them, we gave up.

Swent: You mean you nailed a tobacco can on a post?

Curry: Yes. That was kind of fun.

Swent: Explain this a little bit more.

Curry: The powers-that-be went through the proper channels to acquire these old mining claims. They'd been posted years ahead by numerous individuals and had expired. So we went to the government and reopened this procedure to acquire these claims. And they released the land for claiming on a certain day at a certain hour. So, to make sure we got them before anybody else did, we got our gang together, and we went out and posted about fourteen of these claims, I think. Twelve, or something like that.

Swent: At the same moment?

Curry: Yes. Grant Metzger was up on the top of the mountain with a shotgun, and when he fired that shotgun, we all put our little claim notices on these cans, which we had prepared ahead of time. It was all sort of cloak and dagger stuff.

Swent: And then you ran into town?

Curry: And then we had a man that ran into town to the courthouse and recorded them.

Swent: Did you have any competition for them?

Curry: Well, yes, we did, as a matter of fact. Somebody tried to jump on ahead of us; and that got into sort of a legal battle. We finally settled it just by buying them out. There were just two of these gentlemen on horseback that were trying to claim these at the same time. And they did a pretty crude job of it, so we thought we had them to begin with, but rather than create a big hassle which the newspapers love to get a hold of, we settled. Shades of the Wild West. [laughter]

Swent: So, you had the mining claims, but this didn't give you the land itself, did it?



Curry: It gave us the claims, which was on the land. And then there was a large part of the private property that went along with it, which we purchased outright.

Swent: And when the word gets around that you want it, the price goes up, doesn't it?

Curry: Well, I don't know. I think we got it at a fairly reasonable cost. I don't remember exactly, but that part went all right. Then we had to move some people out of the property that we built the plant on, which was separate. We found that we were too close to them as neighbors, so we got rid of them by buying them out. And they were happy to go, and we were happy to get them out, too. Some of them were a little bit unhappy. I think we bought out about five families, something like that.

Swent: Why did you want to do that?

Curry: Just to get rid of them. They weren't happy with us.

Swent: I see. They were the ones that were complaining about all the noise?

Curry: Well, yes. They were direct neighbors, right next. One of them was only about a hundred yards from our stockpile, where we were stocking the stuff, as it came off the mountain, into a big pile. And there was a dust problem. This was before we got that problem whipped. They were happy to move; some of them were happy to move, some of them didn't want to. Made a big fuss about how they'd planned to live out in the country, away from all that noise of the big city. So there they went.

Swent: And the plant has expanded, then, you said, since you left.

Curry: It's practically doubled in its production. It's still on the same property; they didn't have to buy any more land, that I know of. And it's going great guns. I think it's supplying all the market that the San Andreas plant supplied. And that's down, you probably knew.

Swent: That's closed.

Curry: In fact, at one time, they had additional grinding capacity at Redding; and they were shipping clinker in from Japan and railing it up to the Redding plant for grinding into powder and then shipping it back to the Bay Area for sale.

Swent: Amazing that that could be economic, isn't it?

- Curry: I wonder if it was. Must have been, otherwise they wouldn't have been doing it, but it must have been pretty sketchy.
- Swent: There might be a big boom in the cement business now, with all the reconstruction there will be after the earthquake of October 1989.
- Curry: That's true, and I don't know where it's all going to come from. I haven't followed the cement business since I retired, particularly, but I don't know of any other plants starting up in the area.
- Swent: Kaiser was in cement. Were they a competitor?
- Curry: They're still there, I understand, at Permanente.
- Swent: Who were some of your other competition?
- Curry: Lone Star was one, and we had Oregon Portland Cement, for a while.
- Swent: What you made was also portland?
- Curry: Yes, it's all called portland cement. It's just sort of a trade name. There was another plant in the Bay Area, and I've forgotten the name of it; a plant in Redwood City. And they were making cement out of oyster shells that they dredged out of the Bay. And they ran into quality problems on that, and I think they finally had to shut it down. But they were a large chain. Can't remember the name of it.
- Swent: Did you have any marketing at all?
- Curry: No.
- Swent: Just the production. That's enough.
- Curry: That's enough. I think that marketing had their problems, too.
- Swent: Probably, yes. That was very critical with something like that, I'm sure. So, when you moved up to Redding, was your son Dave still in school?
- Curry: Dave was in school in San Andreas, and he was in the eighth grade and moved into high school when he got to Redding. So he spent four years with us and then went on to college.
- Swent: Did you get involved in school things at all as a community effort?
- Curry: No, not really. I was appointed to the Bank of America Student Awards Program for one year. Are you familiar with that?

Swent: I certainly am.

Curry: Jim won an award, and so did his wife. I think Jim got a thousand dollars, which was a real bonanza in those days. He came out tops in the area, which included everything from Redding to Fresno, I guess, and Bakersfield. So I was on that for one year. The only reason I say that was a school activity was because they held the meetings in the school.

Swent: Well, that's a very good thing; it does help a lot of youngsters.

Curry: We had three winners that went to Sacramento on that thing from this area, which I thought was rather unusual. Jim won in his category for the whole district.

Swent: What was the category?

Curry: I think it was science, or something like that. I can't remember any other school things that might have taken my attention.

Swent: You were awfully busy.

Curry: Well, not really. I was busy enough; busier than I wanted to be. I'm really not much of a joiner or anything like that. I'd rather stay at home and do my job. I did join the Rotary Club; I thought that was a necessary organization for the business I was in.

Swent: They do a lot of good.

Curry: Yes, they do, and they're helpful, too. I've found that if I had any local problems, I could call somebody, and they'd help out. I also got on the Mercy Hospital Advisory Board up there, which took a little time, but not much. The Chamber of Commerce had me on their Roads and Highways Commission with some interesting people, so it was all fun.

Swent: Did you get involved in any political activity beyond the county level?

Curry: No.



## IV RETIREMENT

Swent: Was it a hard decision to retire, or were you looking forward to it?

Curry: No, I was getting ready for it. I was finding things were getting a little hectic, as far as various parts of the job were concerned. I found that making a budget a year and a half in advance was a pain in the neck. You probably run into that too.

Swent: Well, I haven't, but I've heard about it. Yes, it's awfully hard, isn't it?

Curry: Particularly when you have to base it on things that you have no control over. And if you held the budget, you were a hero, and if you didn't, you weren't much of a hero. I guess that's true in any industry where you have to plan ahead.

Swent: People at the top don't have the carefree lives some people think they do.

Curry: Well, they don't understand the problems, either. So, we've worked it out. But, anyway, retirement was kind of something I looked forward to.

Swent: Had you had your place up here for a long time?

Curry: No, we just bought it about, I guess, four or five months ahead of time. I was supposed to retire on my birthday, which was in April. So we bought this house, I think, in February or March. We wanted to come home. This has always been home for us. Retirement time came, and my replacement wasn't available, so I stayed on until the first of June, at which time we'd sold our house up in Redding. Nancy came down here in the first of June and moved in, and I went back to Redding and stayed another month, until the Fourth of July, and commuted on weekends. But it was fun.

Swent: You said you've done quite a little traveling since then.



Curry: Yes, we've been over to Europe or to Australia at least once a year, up until recently; we were in Australia last year for six weeks. Jim was over there, and we stayed with him.

Swent: Up in Queensland?

Curry: Well, we were in Melbourne. That's where his main office is. And we went to Brisbane in Queensland for a few days, saw the Exposition, and then Jim has a beach house up north of Brisbane about sixty miles or so, and we went up there and spent a week or ten days. So we enjoyed ourselves; the weather was nice, although it was getting on to spring, for them, in September. But traveling is getting to be a bit of a problem for us, as far as getting around.

Financially, the dollar isn't what it used to be, either. So, I think maybe we'll stay home, see some of this country, for a change. We would kind of like to go down to see the Southeast, next year, although now that they've had that hurricane, I don't know that there's much to see.

Swent: I was reading that some of the places are already advertising that their beaches are bigger than they were before.

Curry: I'll bet they are. [laughter]

Swent: So they'll probably be back in business fairly soon.

Curry: I think so. Our granddaughter was back in college in North Carolina, a few years back. We went back and saw that part of the country, which was fascinating. So we'd like maybe to see some more of that.

Swent: How many grandchildren do you have?

Curry: Got five. Jim's got three, and Dave's got two.

Swent: Are they all in California?

Curry: Yes. Jim's oldest son was in Australia for quite a while, working for an electronics company, but that company went bust and he came back. And he's now going to business school at Cal [University of California at Berkeley] at the age of thirty-one, or something like that. He's a graduate electrical engineer from Stanford, so I don't know what he's going to wind up doing.

Jim did that too, you know; he went to Cal and then graduated from Stanford. Took his business at Stanford Business School. It's nice to have all you can get.

I can't think of any people that I could mention. I did meet Plato Malozemoff. We were out in Goldfield together, at one time. He was out there investigating some of the problems that we had. And Mr. Nobs, of course, and some of the earlier mine managers, I met, which probably don't meant much. Fred Wise, out at the Getchell, and also Ouray.

Swent: That is a question I've had, though. Did he have a nickname? Was he also known as Jack?

Curry: There was a John Wise, which was no relation, who was also out there about the same time.

Swent: And they were spelled the same way?

Curry: Yes. Johnny Wise was the manager at Idarado after Fred left. I don't know whether Fred left or whether he died. I know he died, but I don't know whether he died on the job or whether it was later. He was a rough, tough individual, Fred. John was a nice guy. He was one of these down-to-earth people that showed up at work in a pair of jeans and an old workshirt, tattered old jacket. Just one of the boys.

Swent: We were talking earlier about different management styles; there are lots of different ways, aren't there, of doing things?

Curry: I can't remember the name of that man that owned the Cherokee, nor his manager. It's just slipped my mind. I know the name of the owner will probably come back, but the manager, I'm sure, is gone; I have no recall on that.

Swent: Probably don't want to remember him. [laughter]

Curry: That was interesting country. Have you been up to that part of Plumas County?

Swent: No, I haven't; I don't know it at all.

Curry: I don't know what it's like now, I haven't been up there for years, but it was pretty remote, in those days; a lot of Dutch people in town, I don't know why. Of course, Shell Oil Company was Dutch, and they had a summer camp up on Lake Almanor, but I don't think that had much to do with the Dutch in town. Peter Lassen, I guess, was, let's see, Swedish, or Norwegian?

Swent: I'm not sure, I don't know.

Curry: But that influence was pretty strong in those days. Bob Clarkson was quite an inventor. His father invented a feeder, and Bob, I

think, carried on with numerous other projects along with the Krebs brothers, who invented a number of things, valves and classifiers. Clarkson was up at this place in Greenville about the same time I was, running another mill. And we see each other occasionally. He lives in Reno now.

Of course we met numerous people through Mac, who were coming into the laboratory when he was working for the government. He was still spending a little time on and off in Grass Valley. Newmont did a lot of work for the Southern Peru Copper Company, and I was involved in a lot of the flotation work on that, and these various people from that organization would come through, periodically.

Swent: That was Toquepala, wasn't it? Was it a complicated ore?

Curry: No, not at all. In fact, it was rather simple; it was just a matter of determining flotation times and reagents and whatnot. I hired a man in Redding from that area. He was working for Southern Peru, and he wanted to get out of there; I guess it's not the most desirable place in the world.

Swent: Awfully isolated.

Curry: No rainfall.

Swent: It's a huge pit; the biggest I've ever seen.

Curry: Yes, yes. Are you aware of that new property that Jim's developing in Chile, the Escondida?

Swent: Yes, well, I've seen a program and slide show about it; haven't been there.

Curry: That's going to be an immense thing.

Swent: Well, I think our tape is almost over.

Curry: Probably as good a time as any to knock it off.

Swent: Perhaps we should, for now.

## V FURTHER RECOLLECTIONS OF EARLY YEARS IN BERKELEY

[Interview 2: December 15, 1989]##

Swent: Let's begin with a little bit more about your family.

Curry: I was born here in San Francisco, some seventy-six years ago, 1913.

Swent: Were your parents from San Francisco?

Curry: No, my mother was born in Reno, Nevada, and my father came from somewhere in the Midwest and he moved my mother and me and her daughter from San Francisco to Berkeley in about 1914. He built a couple of houses in what was a growing neighborhood around College and Ashby Avenue in Berkeley. Built two houses right next to each other and sold one and we moved into the other.

Swent: Are they still there?

Curry: Still there, yes.

Swent: That's a nice old neighborhood.

Curry: It is. This is on Elmwood Avenue; it is just one block long. Do you know Elmwood Avenue?

Swent: I know that little shopping area there.

Curry: Elmwood branches off of Ashby, just above College Avenue. It extends up to Piedmont Avenue and that's the end of it.

Swent: But it gives that whole neighborhood the name.

Curry: Yes. I think it was originally called Elmwood Park or something like that.

Swent: So you don't remember anything of San Francisco, obviously, from your childhood.



Curry: No, no.

Swent: And your father, you said, died when you were a child.

Curry: When I was about seven.

Swent: Flu?

Curry: No, I think it was just--I don't really know. That's sort of a mystery in my life. And my mother had been widowed before with a young daughter. So my half-sister and I grew up in this house in Berkeley until she left and went to college in Reno, and I left in 1932 to go to work in Nevada City.

Swent: It must have been hard for your mother to be a widow.

Curry: It was; she had to go to work. She worked for the University of California, as a matter of fact, as a secretary to Doctor somebody or other at the University Elementary School, which was up on Shattuck and Rose, something like that. And she held that job for many years until she retired.

Swent: Had she had secretarial training before?

Curry: No, she hadn't. She went to secretarial school and learned shorthand and typing and the whole bit. My father was self-employed, and I think there was a struggle after World War I with the Depression that came on, so it was rather a hard time for her.

Swent: You had to take a lot of responsibility early on.

Curry: Well, I don't remember that I took it very seriously, but I might have.

Swent: Your mother's family, though, lived in Grass Valley?

Curry: No, they were in Carson City, Nevada. My father was connected with the gypsum mines out of Mound House, which is about ten miles east of Carson City.

Swent: Your grandfather?

Curry: No, this is my father before he moved into the Bay Area. So that's about the extent of that.

Swent: But you did have the connection with the Searls family.



Curry: My mother and Mrs. Fred Searls were sisters. And she was somewhat younger than my mother, by about nine years, I think. I can't remember the exact timing of this.

Swent: What schools did you attend?

Curry: I attended John Muir School as an elementary school, and then went on to Willard Junior High, then to Berkeley High. And then after I got out of high school I went to Armstrong's Business School for--

Swent: Don't go so fast, let's talk about school a little bit. What do you remember from school? Do you remember any teachers in particular?

Curry: No, none that I could really come up with anything clever to say about them. I got out of high school I think in 1931.

Swent: You worked, I think you said, in a hardware store.

Curry: Yes, after school in high school, I worked two hours every afternoon from four to six and then all day on Saturday, and got paid the sum of seven dollars a week.

Swent: This is in the late twenties.

Curry: Late twenties, during the early part of the Depression. And that was probably the going rate wage at that time.

Swent: What did you do?

Curry: Oh, I waited on the customers and made deliveries. And I bought my first car in 1928. I'd had it at that time.

Swent: What kind of car did you buy?

Curry: It was a beat-up Chevrolet, 1924 Chevy, I think. It was a roadster without a top, and cost me forty-five dollars and it lasted me a year. I sold it for twenty-five dollars, so I got some use out of it. And this helped with the delivery system, too.

Swent: You used that.

Curry: Before I got the car, I did most of it on a bicycle, which was not too handy for delivering large articles.

Swent: Did you drive to school?

Curry: Yes, yes. At the age of fourteen, you could get a driver's license in those days. It seems incredible now to think that a fourteen-

year-old can drive a car. And looking at my grandchildren, I don't know that I'd trust them too much at fourteen. [laughter]

Swent: Well, there wasn't the traffic then.

Curry: That's true.

Swent: You must have been pretty special if you were driving to school. Not many people were doing that in those days.

Curry: Well there was quite a bunch of us. In fact, the streets around Berkeley High School were just covered with parked cars from youngsters that were driving, so I don't think that was unusual.

Swent: Would you like to bring Nancy in at this point? She came in fairly early in your life, didn't she?

Curry: Yes. I guess I knew Nancy when I was sixteen or seventeen. She was going to Anna Head School, and after she graduated from Head's, she went to the University of California and was there a year when her father died and she dropped out of school. And I had gone up to Nevada City in 1932 and we were married in 1934.

Swent: But you were dating in high school?

Curry: Yes. Well, shortly after high school. Yes, I think I was in high school.

Swent: You mentioned going to the Top of the Mark [Mark Hopkins Hotel, San Francisco].

Curry: Yes, we went to the Top of the Mark with a bunch of our buddies.

Swent: How did you get there?

Curry: We took the ferry boat over from Berkeley; drove out that long pier. And the last ferry boat I think left San Francisco at two, so we always had to make that, otherwise there was big trouble. A group of us could go to the Top of the Mark and get a table and pay a cover charge I think of fifty cents, and buy a great big pitcher of fruit punch, and that was our liquid refreshments. This all being during Prohibition, of course. There was nothing in the way of legal alcohol at that time. Just as well.

Swent: But you had pretty good times, I'm sure.

Curry: Oh yes, we did.

Swent: You danced.

Curry: Yes. Danced to Anson Weeks and his tuneful group.

Swent: What was the phrase?

Curry: "Dancin' with Anson." Do you remember this? Were you here at that time?

Swent: No, I wasn't around here then; I didn't come here till later, but I've heard about it.

Curry: You missed a nice time in the Bay Area; it hasn't been the same since, with all the population growth.

Swent: What about the Berkeley fire?

Curry: That was in 1923, as I recall, and I was probably in elementary school at that time. I remember it quite vividly--all the smoke and the confusion. My mother and I took a streetcar and went up to the scene of the fire that evening. As I remember, it was pretty well under control.

Swent: Must have been frightening.

Curry: It was kind of exciting.

Swent: It was far from your home, of course.

Curry: Yes, it was north Berkeley.

Swent: But it was a big event.

Curry: It was. It caused quite a commotion. And I think it hit the radio in all parts of the country.

Swent: What did you do in high school? Did you do any extra-curricular things?

Curry: Well, not really. As I say, I was working after school in those days. I went out for basketball sometime during that period.

Swent: You didn't have a lot of time for much extra, I guess.

Curry: Well, this was between jobs, I think. I wasn't very good; I was a fairly tall, skinny kid in those days, so I couldn't qualify with the big boys.

Swent: You were tall enough, though.

- Curry: I was about five ten, but I only weighed about 125 or 130 pounds, which didn't give me much muscle.
- Swent: Did you have any interest in your studies?
- Curry: Not too much, not too much. I wasn't much of a student. I remember I took French and was horrified at the effort of studying through all the idioms. But I'm sorry I didn't, because after I started to travel, we went to France quite a bit, and I was able to pick a lot of it up on the fly, which was a lot of fun.
- Swent: The Claremont Hotel was just above your house.
- Curry: That's right. I think I mentioned going up and sliding down the fire escape in there. They had a big vertical, spiral fire escape --in fact, they had several of them. And we used to go up the top, up the elevator and sneak out in the top of the fire escape and slide down. Made a lot of noise and I think the residents objected to it strenuously.
- Swent: I'm sure you weren't supposed to be doing it.
- Curry: No, quite so.
- Swent: That was before the Caldecott Tunnel was built, too, wasn't it?
- Curry: Yes, yes. Tunnel Road and the Fish Ranch Road were the only ways of getting into that area at that time.
- Swent: But was Tunnel Road called Tunnel Road before the tunnel?
- Curry: Yes. Well, there was a little tunnel at the top of Tunnel Road. It was a very short one that went through the summit, so that's where the tunnel came in.
- Swent: You graduated from high school in 1931; is that right?
- Curry: Yes, December of 1931.
- Swent: Which was really the depths of the Depression, wasn't it?
- Curry: That's about right, yes.
- Swent: So college, I suppose, was pretty well out of the question.
- Curry: College was out of the question for monetary reasons, and also I didn't have the grades. I hadn't taken the right subjects and those that I did take, I didn't really qualify as a star student.



Swent: So then you went to Armstrong's.

Curry: I went to Armstrong's for a couple of semesters.

Swent: And this is an old business college. It's still there.

Curry: Is it still there?

Swent: Oh yes, doing well, as far as I know.

Curry: At the same site, I suppose.

Swent: I don't know. Where was it?

Curry: Oh, it was below Shattuck, about Shattuck and--I've forgotten the other streets involved. Allston Way was probably where Berkeley High was, and it was in that area.

Swent: I think it's still the same area, and it's still going.

Curry: Good, good. Well, they were pretty busy; they had a lot of students at that time.

Swent: What did you take?

Curry: Oh, I took typing, shorthand, and bookkeeping, and must have been something else to keep me busy. It was just a stopgap, I think. I wasn't really what you'd call a great shorthand person, either.

Swent: Did any of this ever come in handy later?

Curry: I enjoyed typing. In fact, I learned to type at Berkeley High. I never used it as a source of income or anything like that.

Swent: What about the bookkeeping? Was this useful?

Curry: No, it wasn't very useful either. In fact, it was generally sort of a waste of time, I think.

Swent: You didn't use any of this in getting a job later.

Curry: No, no. The job came when my Uncle Fred put me to work in Nevada City.





## VI MORE ABOUT WORKING FOR NEWMONT

Murchie

Swent: And how did this come about? Did he get in touch with you, or did you get in touch with him?

Curry: Oh, I think it was sort of a joint venture. Went to work at the Murchie Mine.

Swent: The Depression virtually had no effect up there, did it?

Curry: No, it was just the opposite. They were riding the high tide of prosperity. In fact, the price of gold went up in 1933, which was maybe about a year after I went to work up there. And that really stimulated--there were people swarming into Nevada County, in fact that whole Mother Lode area, looking for work. So I got the job at twenty-five cents an hour, seven days a week.

Swent: Seven days a week?

Curry: Yes, seven days a week was part of my routine for several years.

Swent: And this was at the Murchie.

Curry: This was at the Murchie.

Swent: And where is that?

Curry: It was about two miles east of Nevada City. It was probably the only active gold mine around Nevada City at that time. The big mines, of course, were in Grass Valley--Empire, North Star, the Idaho-Maryland.

Swent: These were all owned by Newmont.

Curry: No, the Idaho-Maryland was not.

Swent: Right.

Curry: The Empire was, the North Star, and the Pennsylvania. And then the Danny Brough Mine in Browns Valley, which was down near Marysville. I think it was Irish.

Swent: That's a new one; I hadn't heard of that one.

Curry: Well, that didn't last too long.

Swent: Did you ever work at any of the other mines; that is, other than the Newmont mines?

Curry: Yes, I worked at the Getchell for a while; put in almost a year.

Swent: But I mean at this early period. You didn't work at the Zeibright?

Curry: I went up there later on, doing some silica studies.

Swent: But that, again, was later on.

Curry: That was later. The Murchie mill, like all the mills were in those days, was a gravity mill; ore came in at the top and worked its way down through flotation machines and out the bottom into the tailings dam.

Swent: There was a dam?

Curry: Yes. It wasn't always working properly, but it saved up most of the stuff.

Swent: People didn't worry much about those things, then.

Curry: Not in those days, no.

Swent: Were you learning at that point, observing about the mill?

Curry: Oh, yes. Everything was a learning step for me; I was green as grass when it came to the metallurgy of treating ores.

Swent: Did you think of this as something that you wanted to stay with?

Curry: Well, I didn't look at it that way, but it seemed to be a good living and I enjoyed it. Nancy and I got married on I think a hundred and fifty dollars a month in those days. I was probably making at that time four dollars and fifty cents a day.

Swent: Four fifty a day. Not very much.

Curry: No. I think they'd laugh at you now if you offered somebody four dollars and fifty cents a day. What is it, the minimum wage now is four seventy-five an hour?

Swent: Just about that an hour, yes. Where were you married?

Curry: We were married in Berkeley, Nancy's house.

Swent: Her family also had a mining connection, didn't they?

Curry: Yes, her father was manager of the West End Mine in Tonopah, Nevada. And Nancy was born in Tonopah, as a matter of fact. They left there when she was three and moved down to, I think they were in Las Vegas for a brief spell. He was transferred to the West End Chemical Company in Trona, or next to Trona. I think there was a town of West End down in that Searles Lake area. But they moved to Piedmont and he had an office in Oakland and they traveled down to West End periodically to see how things were going. Nancy would go along.

Swent: So she hadn't actually grown up in a mining town, but at least there was a little connection there. Then she moved up to--you were living in Nevada City then, or Grass Valley?

Curry: We rented a little house halfway between, right in an area they called Glenbrook.

Swent: Obviously, you liked it.

Curry: Yes, yes. Stayed there twenty-five years.

### Empire###

Swent: So this magnificent salary came when you were working at the Empire.

Curry: That four seventy-five was at the Empire.

Swent: And, again, in the mill.

Curry: In the mill and the cyanide plant, and later on in the refinery. And from the refinery I went down to the Browns Valley Mine.

Swent: Tell us a little more about the Empire first, what you were doing there and what kind of mill it was.

Curry: The Empire was a stamp mill, with eighty stamps. And they were noisy. I think I mentioned the fact that nobody complained about the noise until the power went off at night when the mills went down and then everybody woke up. It was a very comforting sound in the middle of the night to know that something was going on.

But I was shot down to the Empire cyanide plant after a little stint in the mill, and became an operator on a three-shift basis, which is another seven-day-a-week job.

Swent: Still seven days a week.

Curry: Yes. In fact I was working at the cyanide plant when Nancy and I were married, so she was initiated into this shift routine too.

Swent: How did that work?

Curry: She was a little perturbed to begin with, to be left alone, but she got used to it.

Swent: You had three shifts?

Curry: Three shifts.

Swent: One week on each one, or two?

Curry: We changed shift every week. Went to work at six-thirty in the morning till two-thirty in the afternoon, two-thirty to ten-thirty, and ten-thirty to six-thirty.

Swent: Seven days a week.

Curry: Seven days a week, changing shift every week, which involved a lot of short changes where you'd go home six-thirty and then get a quick bite to eat and a little sleep and get back to work at two-thirty in the afternoon. And then the same procedure when you changed from afternoon shift to graveyard, from two-thirty in the afternoon; go home, get your dinner, take a nap and go back to work at eleven-thirty at night. I could never get used to that; sleeping during the day was never one of my good points.

Swent: No, it would be awfully hard year in and year out.

Curry: But that went on for quite a while; even down in Browns Valley we worked three shifts and driving back and forth took an hour each way.

Swent: You mentioned at the Empire something about setting tappets.



Curry: Yes, that was one of the procedures. As the stamps wore down, due to the attrition and crushing this ore, why, the tappets, which were the means by which the stamps were raised and dropped, had to be adjusted accordingly. So that was a continual operation of keeping these eighty stamps in tune, as it were. So that required a little sledgehammer work, but it had to be done.

Swent: And that was the operator's responsibility?

Curry: The battery man was in charge of the stamp batteries. And it was his job to see that the mercury was fed properly to the back of the batteries, which in turn fed the amalgam plates. But when it came to setting the tappets and adjusting the stamps, why, he had to call in his partner, who was the man in charge of the Wilfley tables where the sulfides were separated. Normally, it was a two-man shift, the battery man and the table operator. During the day, they had extra help, mechanics and the muckers that scooped up the concentrates to send down to the cyanide plant.

Swent: Was this what you started out as, a mucker?

Curry: Yes, yes. I had my hand in setting tappets too, dressing up the plates, recovering the amalgam.

Swent: So this would be the progression: you would start as mucker and then work up.

Curry: Yes, in those days you did a little bit of everything, too.

Swent: Battery man would be the top?

Curry: Battery man was the top.

Swent: Was there a foreman or a supervisor over everything?

Curry: Yes. His was the job of supervising the crew and tending to the amalgam and taking it up to the refinery and retorting it twice a month.

Swent: Do you remember the names of any of the people you worked with?

Curry: Yes. The superintendent was a man named Frank Hooper. I think I mentioned the fact that he got salivated with mercury poisoning and I think lost most of his teeth and his hair dropped out.

Swent: No, you hadn't.

Curry: Didn't mention that? Well this was the result of mercury fumes escaping during the retorting. He'd been at it many years and I

guess he got a little careless and it caught up with him. Management gave him a vacation in Hawaii to recover himself a little bit, but aside from that, it didn't seem to bother him much.

Swent: It wasn't permanent?

Curry: No, it wasn't permanent poisoning. But it didn't do him any good, either.

Swent: No. But that was from the mercury, not from the cyanide.

Curry: No, that was mercury.

Swent: There was a cyanide plant, also.

Curry: The cyanide plant was just downstream from the mill.

Swent: Did you work there?

Curry: Yes, I spent quite a bit of my time there as a plant operator. The Empire cyanide plant was a sort of a "Winchester House." It was built piecemeal. It was built originally to handle the Empire concentrates and tailings. Murchie Mine came into production and they added on the cyanide plant to accommodate those concentrates from the Murchie. The North Star Mine was sending concentrates over; they had a shorter haul and they used to ship their concentrates over in the empty cyanide cans which were dumped out into the process.

I mentioned the fact that some of the equipment was invented at the Empire.

Swent: Let's talk about that.

Curry: The Oliver filter was designed by Edmund Oliver, who I think was a graduate of the Mining School of California. And he went on to develop the Oliver Filter Company which made oil filters for automobiles. But I think he got his start there with the Oliver filter that was built for the Empire cyanide plant. And they had six of them filtering the slimes from the Empire mill that were cyanided.

Swent: What was so special about the Oliver filters?

Curry: Well it was a continuous filter, for one thing; I think most of the filters up to that point were sort of a batch job where you put a load of material into something and sucked the water out of it. But the Oliver filter was--are you familiar with the Oliver filter?

- Swent: I've seen them--it's a cylinder, isn't it?
- Curry: Yes, and it operated continuously. The only repairs that had to be done were installing the canvas on it periodically. They'd get holes in the canvas and the material would start to go through instead of not going through.
- Swent: It was a great breakthrough.
- Curry: Yes, it was. They had several at the Getchell. And he also made a stationary type filter also, leaf and plate, plate and leaf, where the material was pumped into this steel frame and filtered through the canvas that way.
- Swent: Did you know the Olivers at all? Did you meet any of them?
- Curry: I think I met some of the youngsters later on. Seems to me a family either in Berkeley or Piedmont, and I don't know what's happened to them.
- Swent: They weren't working up in Grass Valley?
- Curry: No, no.

### Browns Valley

- Swent: Was it after the Empire that you went to Browns Valley?
- Curry: I went to Browns Valley twice. They were just developing this operation all over; the Browns Valley Mine had been in operation for a number of years. They had just installed a new mill. Stamps again.
- Swent: What was your job there?
- Curry: I was millman. They ran that mill on a three-shift basis, but only one man on a shift, which would not be allowed, these days. But that operated for three months and shut down for further development of the mine, so I went back to Grass Valley again.
- Swent: What kind of clothes did you wear when you worked in the mill?
- Curry: Oh, probably an old pair of jeans and a denim jacket.
- Swent: Any safety protective gear?



Curry: Just goggles when setting the tappets for the stamps. That was rather a hazardous job with a lot of steel flying around occasionally. Steel would break off of the tappet keys so goggles were, I don't think they were mandatory, but it was just a good idea.

Swent: No special shoes or gloves or anything?

Curry: Well, we wore gloves as a matter of hand protection, but I don't think safety shoes were required in those days.

Swent: Did the company pay for any of this or did you have to?

Curry: No, no, we paid for it.

Swent: Goggles as well?

Curry: I think the goggles were furnished. But later on in the refinery, why, the company supplied asbestos gloves and asbestos hoods and coats, aprons, just to keep from burning up.

Swent: They probably kept them in case there was any gold sticking to them, didn't they?

Curry: Well, I don't think that was part of it.

Swent: But that was later. You mentioned there were ball mills at Browns Valley?

Curry: One, one ball mill. Frank McQuiston installed ball mills and flotation machines at the Empire in about 1937 or '38, somewhere in there. And this was a period of time when I was at Browns Valley so we didn't get in much on the installation of this new process. But it eliminated the need to cyanide the Empire tailings from there on out. Also gave a much better recovery. The Empire had two ball mills eventually, which were Marcy ball mills. Hardinge classifiers, Fagergren flotation machines, and that was about it.

Swent: Were there concerns about security in these mills?

Curry: I don't think too much. There was concern about bullion, I think. When the bullion was shipped out of the Empire refinery, Mr. Nobs would put on a pistol and load all this stuff into his pickup and take it down to the railroad station where it was turned over to the American Express people and they took care of it from there to San Francisco to the mint.

Social Life and Health Care

Swent: Nobs was the manager?

Curry: Nobs was the manager.

Swent: Did you know him very well?

Curry: Yes, we got to know the Nobs family. They had five children that were all about our age, four boys and a girl. And they were quite helpful to Nancy and me and included us in some of their parties.

Swent: They had a lot of parties, didn't they?

Curry: They did, yes. They took care of all the young people in town. In those days, there were quite a number of us getting started in the mining business. The Golden Center was a mine in the center of Grass Valley and it had a young crew. It was operated by the Minnesota company. They came from the iron mines. The Butlers owned the Golden Center and Cooley Butler was the young son of the owner of the mine and he was a mining engineer so he was working at the Golden Center.

I didn't mention the Lava Cap either; that was another mine in the area that was mostly silver. It went about ten parts of silver to one part of gold, but it was considered a gold mine, silver not being worth very much in those days. But they made an effort to recover it and they didn't do a very good job. That Lava Cap ore was rather refractory. Getting the gold out was even a struggle.

Swent: All these people had their own mills, refineries, everything new. No custom--

Curry: The Empire went into custom milling at one time when Selby Smelter went on strike. And they sent me out recruiting customers for the Empire cyanide plant and I spent a week traveling from Oroville down to Mariposa calling on these various mines that had mills but no cyanide plants. There I got a few customers; we got a little business from people hauling their concentrates in from as far down as--we had a customer from Redding, as a matter of fact, that used to ship concentrates down periodically, about once a month.

Swent: And this continued even after Selby reopened?

Curry: Yes, for a short time and then the war came along and things just sort of faded away. Costs got out of hand--difficult to buy materials.



Swent: There was a club of some sort, wasn't there?

Curry: The Empire Country Club, was that it?

Swent: I don't know. There was a group of young people that had parties.

Curry: Well, the Empire Country Club was situated on the Empire property. The clubhouse is still there and the Empire Country Club is still in business but it catered to all ages, mostly mining people.

Swent: This is one way you made friends.

Curry: Right. And the Butlers were members and the Kalenborns, who were Butler's group. There was also a subsection of the AIME [American Institute of Mining, Metallurgical, and Petroleum Engineers] that operated up until the war and it attracted a fairly sizeable group. Met once a month for dinner, drinks beforehand in the Bret Harte Bar. And we had some interesting programs.

Swent: The Bret Harte Bar. This was downtown then in Grass Valley.

Curry: Yes.

Swent: Did you do anything in the town? Were there civic things in the town or was it all mining?

Curry: It was mostly mining as far as I was concerned. The big social event in Grass Valley was the Fireman's Ball, which was early in February, and that attracted a lot of people. The firemen in their red shirts and their suspenders.

Swent: Were they volunteer firefighters?

Curry: Yes, yes. And that was the cause for a lot of the ladies to go out and get new dresses for the coming occasion.

Swent: What was Nancy doing? When did you start your family?

Curry: Jimmy was born in 1936.

Swent: She was busy, then.

Curry: She was twenty-one. I was twenty-three. And we moved down to Browns Valley the first time when he was six months old and he caught the whooping cough from somebody. That was quite a traumatic experience. Her mother came up and they got him down to the Bay Area where he could get some medical help.

The closest pediatrician at that time was a Doctor Rector, who used to come up to Grass Valley once a month and rent a couple of rooms at the Bret Harte Inn and look at all the little kids. In fact, I think that's where he got the whooping cough.

##

Swent: So we have young Jimmy at Browns Valley with whooping cough at six months of age; that's pretty serious. Where was he born?

Curry: He was born in Nevada City.

Swent: Miner's Hospital, I suppose.

Curry: No, Miner's Hospital wasn't in existence at that time. There was a sanitarium that was run by a couple of ladies of Scotch ancestry that took care of these things.

Swent: You say that with pleasure because Curry is Scottish, I take it.  
[laughter]

Curry: Whatever her name was, just loved all these newborns that came along. She would sit in front of the coal stove in the middle of summer and see that they didn't get too cold. [laughter]

Swent: Who was the doctor?

Curry: The doctor was an old friend, Doctor Harry March, who we see periodically. He's in his nineties and lives in Sebastopol, California and spends his summers when he can--he's not able to get around much anymore--but they have a little house up at Lake Tahoe. He retired rather early from the medical profession and moved to Tahiti. So he spent his winter months in Tahiti and then would move up to Tahoe in the summer. Miner's Hospital came along a little later. My son Dave was born at Miner's.

Swent: And Doctor Jones?

Curry: Doctor Jones ran the hospital in Grass Valley which was called the Jones Hospital.

Swent: Did you know him?

Curry: I knew of him casually.

Swent: Did you have any sort of medical benefits with your job?

Curry: Yes. Later on the company, after they built the Miner's Hospital, hired a young doctor to be the company doctor and operated out of the hospital.

Swent: Was the hospital built by the mining company?

Curry: Yes. Those that belonged to the Miner's Hospital Association paid some ridiculous fee of seventy-five cents a month or something like that, which gave them their hospitalization, their doctor's visits, and prescriptions. This didn't extend to the families; the families had to pay--I think they got their services for twenty-five percent off, something like that. But it was practically nothing in those days.

Swent: Were you a hunter? Did you go hunting?

Curry: No, I never went hunting--well I did, I take that back. I went duck hunting several times later on, after the war, but I was never a real avid hunter or fisherman.

Swent: What did you do for amusement? Well, of course you were working this terrible schedule.

Curry: Yes, yes. In those days there wasn't much amusement. We used to get together and roller skate once in a while; there was a skating rink out of Grass Valley. And there was a sizeable entertainment park at Glenbrook, which was called the Lake Olympia. They had this big lake and a dancing floor in the middle with a spring floor. And they used to have their miner's picnics out there once a year and dancing on Saturday nights. So that was a form of amusement.

Swent: If you were working seven days a week and changing shifts, you weren't doing much playing.

Curry: No, in those days we didn't require much entertainment. Skiing was becoming popular. There were no ski lifts early on. And occasionally we'd go skiing, spend all day climbing a mountain, sliding down. That was it.

Swent: You'd have to take a day off from work to do this.

Curry: Well, no; you could sneak a little of that in when you were working afternoon shift; you had your mornings free. We joined a golf club, which I think was ten dollars a month. Nancy and I would play golf during the mornings when I was working afternoon shift.

Swent: Was bridge playing a big thing?



Curry: Nancy always enjoyed bridge; I never did. We had a poker group that used to play poker once or twice a month; have a little supper that went along with it. I remember traveling out to Lava Cap Mine on several stormy nights to play poker with a crew out there.

Swent: This is a men's activity; women didn't get in on the poker very much.

Curry: They got in on another little group that we had. The men's poker group played poker and the ladies went along and knitted, sewed. But that didn't last very long; they decided that sewing wasn't that much fun.

Swent: What about lodges and Kiwanis and Rotary and things like that? Was that a part of your life at that point?

Curry: No, not really; Rotary came along when I went to Redding. But they had an Elks Club in Nevada City and Grass Valley and I joined that briefly but that wasn't my dish of tea, really.

#### Learning Metallurgy on the Job

Swent: When did Frank McQuiston play a part in your life?

Curry: He played a rather important part in my life; I learned a lot from Frank. We worked together just prior to the war in the laboratory that he set up at the North Star. But he was at the Empire as an assayer and did some metallurgy at that point, too.

Otto Brown I mentioned, I think. He was a field engineer for American Cyanamid and he covered all of northern California and Nevada. Otto had come through Nevada and through Grass Valley periodically selling flotation reagents and cyanide. And after Frank set up his laboratory, he would come in and, with me, we would cover a lot of outside problems. He was quite helpful to the Empire; they felt that there was no reason to not let him use the laboratory at his convenience. And, as a consequence, we worked on a lot of outside problems involving mercury, tungsten, copper.

Swent: That is, outside in the sense that they weren't there at Empire?

Curry: They weren't Empire problems.

Swent: Right. This must have been very educational for you.

Curry: It was, it was great. He did a lot of work for the Gatchell Mine, too. American Cyanamid had a fantastic laboratory back East. I've forgotten the name of the area, but they did a lot of extensive work on spectrophotography and spectrographic analyses. But that was a long term project, so shorter projects were taken care of there at the North Star laboratory.

I met a lot of interesting people; I can't remember their names. I remember one of them was a graduate from the University of Nevada and was running a tungsten mine at Rawhide, and he would bring his problems in to Grass Valley. Otto and I would work on them along with him, and I would do the tungsten assaying.

Swent: That's interesting, you were using Empire facilities.

Curry: Yes. On some of these projects, the outside company would pay the expenses. In fact, they paid the tungsten assays. Of course, that was probably the only expense involved. The flotation reagents were all samples and they didn't cost anything.

Swent: Let's talk a little bit about your education. I was talking to Grant Metzger and he made the remark that a lot of college graduates can barely tie their shoes. [laughter]

Curry: I don't know that that's a fair comment.

Swent: How do you feel about the fact that you didn't have a university education and that you certainly rose to the top? Did you feel that it was a handicap to you not to have a college education?

Curry: Well, I felt it was a problem; I'm sorry I didn't have an education in college because I'm sure there was a lot of things that I could have learned that I didn't. But I picked up an awful lot just working at it.

Swent: Evidently you did.

Curry: It was interesting doing; as I say, I had a lot of help with Frank McQuiston and Otto Brown and other people that might have been involved.

Swent: Maybe you learned it more directly without having to spend a lot of time on other things.

Curry: Well, that could have been. I don't know what to say about that. It was a little difficult in picking it up, but it came along, maybe would take a little longer.



Swent: So at some point, then, you were moved from just general mill operation into metallurgy.

Curry: Yes, that came along mostly just prior to World War II. I had been out at the Getchell prior to that.

### Getchell

Swent: Tell me about your living conditions there.

Curry: They were pretty spartan. There was no housing to begin with, so Nancy moved back home to Berkeley and I went out and lived in a boarding house for December, January, February, and part of March, when I fell heir to a one-room tent that had been modified and built on to. It was walled on the inside with this type of plywood and then faced on the outside with tin, corrugated iron. It had electricity, one light bulb, and we had a two-burner electric stove that we bought and plugged in, and cold running water and that was it.

Swent: Toilet outside?

Curry: Outside, which we shared with a neighbor next door who had three or four children. But it was an experience; we enjoyed that, met some nice people.

Swent: It wasn't forever.

Curry: No. We met young Peter Joralemon. He came along later, I'll qualify that; I met him at a later stage when I went out to do a little mill testing with Frank. But that was a young crew out there and we all joined hands.

Swent: The weather's pretty fierce there, isn't it?

Curry: It gets cold, but it's dry usually. We got a little snow, a time or two. A little rain and the countryside would turn into mud. I think I mentioned that Frank had an eye problem during this and I had to give him penicillin shots.

Swent: Yes. How did you happen to know how to do that?

Curry: I practiced on my young son at one time; they thought he had rheumatic fever. It turned out he didn't, but one of the medications was giving him shots of penicillin, which was rather traumatic, because penicillin was just coming out in those days and

it was rather a thick, syrupy material that had to be warmed up to go through the needle and the needle had to be fairly good sized to accommodate it. So Nancy and I were giving him shots every six or eight hours, day and night. So I carried that knowledge on to Frank McQuiston.

Swent: It came in handy.

Curry: I would walk up through the mud and the snow and wash the cyanide off my hands and give him the shot.

Swent: Did he live out there much of the time, too?

Curry: No, he didn't. I think this mill test lasted maybe ten days but he was out at that time.

Swent: But you were actually there for quite some time.

Curry: I was there for ten months, but then I went back a couple of times. I went back one time with Otto Brown just to look around in the middle of winter, and later on when Frank put this mill test together, I went out and ran a shift for him in the mill.

Swent: Were you building a mill there?

Curry: No, they just modified the existing mill to accommodate this test, put in some flotation machines. Ran some cyanide agitators with caustic soda.

Swent: Was it successful so that you kept going there?

Curry: It was moderately successful. I think about that time the war was just over. But they converted that mill from gold to a tungsten plant. And Bob Baker, who you may have heard of, was superintendent of the tungsten mill operation.

Swent: That was to keep it going during the war?

Curry: No, this I think was after the war.

Swent: Oh, I was wondering about L-208, if it was closed.

Curry: L-208 was during the war and I think they were milling tungsten at that time, too.

Swent: So they could keep going.

Curry: But that ore always gave them problems and they were operating on and off, converting to tungsten when tungsten was good, and back to

gold. But I don't know what they're doing there now. I understand that they're doing some development in the mine.

Swent: You went at some point to the Cherokee Mine.

Curry: I left the Getchell and went to the Cherokee, and I was only there a couple of months when they shut that down because the manager ran off with the payroll.

Swent: At that point you had left Newmont.

Curry: I left Newmont, yes, I had.

Swent: And went with Cherokee briefly.

Curry: Went to Cherokee and after Cherokee, I was able to get back on with the Empire crew with Frank McQuiston, and that's when I went to work with Frank in the metallurgical laboratory that he put together at the North Star.

Swent: And then Grey Eagle?

Curry: I never got to the Grey Eagle, but Frank and I did the metallurgy for the Grey Eagle and that was during the war, prior to the time that Frank had left for the New York operation.

#### Idarado and Telluride, Colorado

Swent: Then he was with AEC. That was later, though. You went to Idarado, in Colorado.

Curry: I went to Idarado and Telluride on short periods of time.

Swent: You didn't actually reside there?

Curry: No. The first time I was there was a matter of maybe a week or ten days. The second time was a matter of six weeks. That was at Telluride.

Swent: And that was when Tatman was there?

Curry: Tatman was there at Telluride, too.

Swent: Why did you go there?

Curry: They told me to. [laughter]

Swent: But what were you doing?

Curry: I was doing some test work; they were having some problems in the mill and I went over to sample, actually, the product that was going through the mill at the time.

Swent: What kind of problems were they having?

Curry: They weren't getting a very good recovery. That was a copper, lead, zinc mine, and they were having trouble getting their recoveries in the proper concentrates. It's kind of difficult to get a copper concentrate that doesn't have lead in it, or zinc, as you probably know, so that was part of my effort. Telluride mined copper, lead, zinc, gold, and silver, and iron. They produced concentrates of copper, lead, and zinc. And when the market was right, they'd recover an iron pyrite, which was not very important, but they did have the facilities for getting it. The silver came out with the lead and galena; the zinc was sphalerite, which was a very clean product; and the gold they recovered with cyanide in the flotation process. They floated it off with the carbon.

Swent: That was a new development at that time, which Frank McQuiston had something to do with.

Curry: Right. I believe he did, I believe he did.

Swent: Maybe you did.

Curry: No, I didn't have much to do with the Telluride until later on. The minerals in that ore were barely--what do I want to say? None of them alone would stand up by themselves; there had to be a total commitment. Fred Searls said that they didn't know whether that ore body was ore or waste, so they had to make a fairly good recovery of all of them to make it pay.

Swent: When you were sent out there, had you had much experience in copper?

Curry: Yes, we had done a bit of copper there at the North Star, so it was fairly straightforward.

Swent: What were you supposed to do when you went to Telluride?

Curry: I was supposed to find out what reagents were best for the various types of ore they had in the mine. That was rather difficult because, in mining this stuff, they had a tendency to combine ores from here, there, and elsewhere, so they had to concentrate on getting a reagent blend that would do the most for the combination.



Swent: When you're sent in like this, is there any resentment on the part of the local people?

Curry: No, no.

Swent: You didn't have to do any personal relations work on that?

Curry: The Telluride mill had not been completed at that time, so they were groping around for the right combination of reagents.

Swent: So you weren't treading on any toes?

Curry: No, no. No, that worked out very well. Tatman was superintendent of that operation and he was busy getting supplies, tying up the loose ends to make it go.

Swent: It's nice country if you're there at the right time of year.

Curry: Yes, I was there at the right time; fall was coming on. Beautiful, with the aspen turning color.

##

Swent: It's pretty high.

Curry: Yes, it's 9000, I think, 9500. So it got quite cold at night. I was there from the middle of September, Labor Day, which is the beginning of September, almost till the end of October.

Swent: Nice time of year there.

Curry: And the nights would get chilly and a little ice around.

Swent: The mill was on one side of the mountain but the mine went all the way through?

Curry: The mine went all the way through; in fact, it was connected to the mine out of Ouray, the Idarado Mine, which was out of Ouray. There was a mill in Idarado and a mill at Telluride, too. I guess the distance between the two required two mills, as far as I can understand. The ores were somewhat similar but a little different.

#### Newmont Exploration Company

Curry: I also worked on some of that Southern Peru Copper problem, Cuajone. They shipped their ore up to Grass Valley and we spent a

long time on that. This was during my last three years at the Grass Valley laboratory, when I was technically working for Newmont Exploration.

Swent: That was the very beginning of Southern Peru Copper Corporation, wasn't it?

Curry: Yes. I worked on that with a metallurgist from New York under the auspices of Newmont Exploration. Les Bechaud was his name and he went on back to New York when they folded that laboratory. They wanted to consolidate their operations in Connecticut, so they got their geophysical group and their metallurgical group back there under one roof and that was where I was supposed to go. In fact, I had the family all prepared for it. Not that I wanted to go, but that's where I was scheduled, when Grant Metzger called me to ask me if I wanted to go to work for him. So I parted company with Newmont on the thirty-first day of December, 1955.

Swent: You'd been with them for over twenty years.

Curry: Twenty-five. I wasn't too happy about going to the East Coast. My mother was still living in Berkeley. Nancy's mother was living and Jim was in college, so we had lots of ties here.

Swent: That was pretty hard to think of moving to Connecticut.

Curry: Yes. And they didn't say that Connecticut was the nicest place in the world to live, either; the weather was hot and muggy in the summer and the winters were cold and snowy in the wintertime.

Swent: Things were also going sour for Newmont in Grass Valley at that time, weren't they?

Curry: Yes, they were. In fact, they shut the mine down in March, I think, of 1956.

Swent: Could you see this coming?

Curry: Well, I could, because costs were getting out of hand.

Swent: They were having labor problems, weren't they?

Curry: That's what finally shut them down. Labor wanted an increase in wages from I think their seven dollars and fifty cents a day to I don't know what, and management couldn't do it so they shut her down.

[Interview continues after a break]

Swent: We have some pictures here, from the local newspaper; that would be from the Grass Valley paper?

Curry: Yes, yes. It doesn't have a date.

Swent: Well, you thought maybe 1980?

Curry: Yes. 1980 with George Oyung, who was the gardener and general handyman of the mine up until the time it closed. And then he was hired by the state, who purchased the property, and he just recently retired, about two or three months ago. He was an old-timer around there. When I went to work I told him I'd teach him English if he'd teach me Chinese, but he did a lot better job than I did, because I can't speak very much Chinese and he speaks very good English.

Swent: And he was there from the thirties on?

Curry: Oh yes. And Virgil Angove was a millman and I'm not sure what happened to him; I think he retired and became a general gardener around town just doing handiwork, pulling weeds and raking leaves and anything to make himself generally useful. And that's it.

Swent: And the point of the picture was that together, you'd accumulated over a hundred years of service.

Curry: A hundred and eight years of service, it says. This was after I'd retired.

Swent: This next picture, what was it called?

Curry: I called it the Gold Dust Gang. The time this picture was taken, they were running the refinery on two shifts, taking care of some back work. Normally, they just operated on one shift during the week, with Sundays off.

This is where we first got our taste of the six-day week. And that's me and Joe Kashatus, who incidentally was a great golfer. He used to play golf at the local golf club and set the course record at one time. Jack Lewis became a pilot, very successful. Unfortunately, he developed cancer and died about fifteen years ago. He was a senior pilot with TWA [Trans World Airlines] and did most of his flying before the jet age and was flying these mammoth four-engine planes across the Atlantic.

Swent: But you said he was flying in the thirties up there in Grass Valley.



Curry: Yes, he did a little planting of rice from the air and then he went on to become a pilot for some small airline down in southern California, flying the Catalina-Los Angeles run.

And Alan Larue went to Arabia and worked some position in the oil fields when they first started I think it was American refining, that oil company, Aramco. And I don't know what happened to him since.

Swent: Grass Valley was a great training ground for people, wasn't it? They went from there all over the world.

Curry: Oh, that's very true; they did.

Swent: And then I wanted you to tell about this tube of gold, too, please.

Curry: That tube of gold was less than ten inches long; I would say that's about eight, eight and a half. Made out of pyrex. After it was filled, it was sealed with lead seals on either end, plus the fact that it was cemented together at the top where the cover went on. And it contained a hundred fine ounces of gold and it was worth four thousand dollars at the price of forty dollars an ounce.

Swent: And how did you get away with that?

Curry: It was supposedly an untreated gold in its natural state and therefore was exempt from the rule that prevented anybody from owning or selling treated gold such as bullion or amalgam or any part of that process.

Swent: The price of gold was fixed at that time.

Curry: It was fixed at thirty-five dollars an ounce and I have a feeling that we made about twenty of these, or prepared twenty of them. They were sold with the provision that if the owner wanted to turn them back, he could get his forty dollars back. I don't know how much of this was returned, if any.

Swent: Whose idea was this?

Curry: I think it was a management suggestion and we followed through with it by taking a cut off of the jig in the mill and putting it across a table to separate as much of the pyrite and gangue material that we could. Then it was further treated in a small laboratory mill to grind up any coarse pyrite. It was subjected to nitric acid to dissolve any of the copper blasting caps or copper wire that happened to be floating around in it, and that was it.

Swent: Were these really nuggets?



Curry: Well, they were pieces of gold anywhere from an eighth of an inch in measurement, cubes, for little nuggets, down to the very finest. But it had to pass through a jig screen that was about eight or ten mesh.

Swent: But it hadn't been refined in any way?

Curry: No, no, just cleaned up.

Swent: Not a very big business, though, I guess.

Curry: No, it wasn't. I don't think a lot of people had much faith in the price of gold going up in the near future, so they had to be prepared to sit on it for a long time because the price of gold didn't go up until the early sixties. And this was being done in the late forties, early fifties.

Swent: Did the Empire Mine operate through the war?

Curry: Except when they were closed down by L-208. But they managed to skim by. As I mentioned earlier, we discovered a little tungsten down in the bottom of the ten thousand five hundred foot level of the North Star, so we brought that up and treated it, recovered a little bit of it. It was very minor and I'm sure it didn't do much to help the war effort, but it helped the Empire, kept them alive a little bit.



## VII MORE ABOUT WORKING FOR CALAVERAS

The San Andreas Plant

Swent: Shall we talk about your going then to Calaveras? That's an old historic company, too.

Curry: That started I think about 1925.

Swent: So it's not so old, then.

Curry: No. A lot of their early production went into the construction of the Pardee Dam, which is located on the Mokelumne River and now serves as a source of water for the East Bay Municipal Water District.

And it skimmed along for many years just on two kilns with a moderate production. I don't know how much they were making at that time. And then they saw that the West was growing so they put in three more kilns, eventually, and ran a five-kiln plant with a lot of antiquated machinery.

It was a wet process, which meant that they had to spend a lot of money on fuel to evaporate the water before they could burn it into cement clinker.

Swent: This was down in San Andreas?

Curry: Yes.

Swent: What kind of fuel did they use?

Curry: They started out using oil and then converted to gas. I believe they developed their own gas well down in the Stockton-Delta area, which was later sold to PG&E.

By today's process it would not be a very economical plant. In fact, they developed a new quarry and put in a pipeline of some fourteen miles where they had to pump a slurry; that finally got to

the point where it didn't pay and they abandoned it, so it's not working any more.

Swent: When you went to work for them, you went as a metallurgist?

Curry: I was called a process engineer. They were in the process of installing the hydraulic cyclones in the mill to use as classifiers; that was my first job as process engineer, to see that those were put to work and operating.

Swent: And was the work that you'd done before relevant at all to this? Was it similar?

Curry: Similar, but not too close. I was there for three and a half years.

Swent: They had a lot of labor trouble, didn't they?

Curry: They never had a strike when I was there, but they were always sort of on the verge; every two years they'd go through the pains of negotiating labor contracts. And they weren't always very happy, lots of threatening action and conversation.

Swent: Was there just one union?

Curry: The American Cement, Lime, and Gypsum Workers, or the Cement, Lime, and Gypsum Workers of America, to be exact.

Swent: I don't know where I got the idea that there was also fighting among unions.

Curry: I think that might have been Permanente. They had several unions there and they were always in continuous labor negotiations with the steel workers, and the electricians, and the pipe fitters, and what have you.

Swent: But that wasn't true at San Andreas?

Curry: No.

### The Redding Plant

Swent: So when you went there, were you aware that the Redding plant was coming?



Curry: No, that wasn't in the cards until 1957 or 1958. They sent a crew up there to do some diamond drilling. And at that time I think they were going through a little slump in national economy; they disbanded their actions up there and moved back and didn't start up again until 1959 when I went up there.

### Filing the Claims

Swent: When you went up there, they didn't even have the land, did they?

Curry: They were in the process of purchasing it.

Swent: But you had something to do with acquiring it.

Curry: Yes, they had a group of mining claims that they picked up. The United States Government Bureau of Land Management was releasing these claims to the public; I think there were about ten of them. And we had a crew up there that, at eight o'clock on a certain morning, why, they fired a gun and everybody stuck the claim notices in a tobacco can on their particular claim and therefore it was made a mining claim.

Swent: Were there any competitors?

Curry: Yes, there was a competitor that was there about the same time. We beat him at the claim, but his crew beat us into the courthouse with the claim notices, so we had a little bit of trouble on that. But we finally bought this group out and settled it for once and for all.

Swent: Who were they?

Curry: It was two people that were interested in it.

Swent: It wasn't a big company, then?

Curry: No, no.

Swent: I'm not clear about what you fastened the tobacco can to.

Curry: These mining claims were all staked out ahead of time; we staked them out. In the center of the mining claim you put a claim post on which was attached a tobacco can, which I guess was customary in those days.

Swent: Yes, I don't think there are even tobacco cans any more, are there?  
[laughter]

Curry: I doubt it.

Swent: They were red as I remember, weren't they?

Curry: Well there were different colors depending on who was selling it.

Swent: Little metal cans--

Curry: --with a little flip-up lid on the top--

Swent: --that was small enough to go in your pocket, about the size of a cigarette pack, I guess, maybe a little bigger.

Curry: I would imagine about six inches tall and an inch thick and three inches wide.

Swent: I haven't seen one for so long. I suppose if you had one it would be a collector's item today.

Curry: Probably. [laughter]

Swent: So you stuck your piece of paper--

Curry: The claim notice went in the can.

Swent: And where did you get the claim notice?

Curry: Claim notices I guess were picked up at the Bureau of Land Management office.

Swent: This was a piece of paper you had to get from an agency somewhere?

Curry: And it spelled out the location of the claim and the name, if it had one. All very forty-ninish.

Swent: So you put your notice in the can and nailed it to the post and then somebody else came along five minutes later and put a paper in the same can?

Curry: No, they had to use their own. We wouldn't let them use ours.  
[laughter]

Swent: And then they beat you into town?

Curry: I've forgotten just exactly what happened. It seems to me our land man had a duplicate set, which he was all ready to present to the

recorder's office at the time this was all officially declared "go." And the other group had their member in there who happened to be the wife of one of these two gentlemen. Our land man was not familiar with who she was and, being a gentleman, he let her record her notices first. [laughter] So she beat us by about five minutes.

Swent: So, technically they had the claims.

Curry: Technically, they did, but they did such a slipshod job of laying out these claims that I don't think they had much of a chance of making them legal.

But they threatened to sue and it came about that we decided to buy them out and settle the whole thing quietly. We didn't want to appear in the papers as being a big, bad corporation, threatening these little people.

Swent: The community was not too hospitable, I understand.

Curry: No, the community was a little bit against us. We had the county supervisors on our side who were anxious to look forward to the tax income that they'd get from our operation. We were outside the city limits. During my tenure up there, we were paying taxes at the rate of a thousand dollars a day, so they were anxious to get that so they could spend it on something else.

But I think the general population was a little leery of our coming in because of the damage that the copper mines had done earlier to the landscape.

Swent: What was that?

Curry: Sulfur dioxide fumes killed all the vegetation for, oh, a twenty-mile radius. Actually, the people of town thought that the fumes were killing their roses.

Swent: That had been a long time before, though.

Curry: Yes. But people still remembered it.

Swent: And then the hunters, you said--

Curry: I think the outdoorsmen were afraid that we were going to spoil the beauties of their hunting grounds, and I don't think we did. The only things that we killed up there were rattlesnakes; [laughter] we got a few of those. We eventually ran them out, though; I don't think they liked the noise that we were making, explosives and the general commotion.

#/#

Swent: What sort of permits did you have to get?

Curry: To begin with, we had to get the area zoned for industrial usage. This required that we acquaint the planning commission and any other interested parties of just what we were doing. That was part of my earlier duties, was to travel around and make our wants known.

Swent: You did that before you even had the claims?

Curry: No, we had the claims first.

Swent: But that was one of the first things to do.

Curry: Then I traveled the chicken-and-pea dinner circuit for quite a while with various organizations just to let them know that we weren't about ready to ruin their lives and their world.

Swent: What sorts of organizations did you go to?

Curry: Anybody that wanted an after-dinner speaker, and there were a lot of them. I remember one particularly, was the Dental Association of Shasta County. I don't think they cared much about the manufacturing of cement but the program chairman was always interested to get somebody that would show a movie or talk about what was going on.

Swent: What sort of program did you have?

Curry: I had available a sixteen-millimeter film that was taken down at the plant at San Andreas that showed the action that went on. I soon gave that up because one of the earlier pictures showed a tremendous blast in the quarry with great quantities of dust flying around in the atmosphere; that was not exactly what we wanted to portray. And then there was just a general talk about what we planned to do, and what benefits the county was supposed to accrue in the way of hiring labor and tax benefits, and what we could provide the county in the way of material. It all worked out very well.

Swent: The federal highway aid program began about that time.

Curry: That's right. And then the PG&E was putting up a lot of dams at that time on the Pit River. In fact I think we supplied cement for three of them. The Trinity Dam was largely built with one of our competitor's products. Permanente put their cement in there early on, as they did the Shasta Dam. Some of the works from the Trinity



Dam were Calaveras, such as power house and the tunnel and a few incidentals.

Swent: Were these contracts made before you built your plant or afterwards? Did the siting of your plant have anything to do with those dam projects?

Curry: Well, maybe in the long run they could see the development of that end of the state. Irrigation canals were pretty big users of cement and we put in a few of those. But you're right, it was largely highways and dams, irrigation canals, and this general industrial construction.

Swent: Did you have anything to do with the sales end of things?

Curry: No, Calaveras had their sales department that took pretty good care of that.

Swent: So there could have been a chance that you'd build this big new plant and miss out on the big market?

Curry: There's always that possibility, but I think they had it pretty well wired.

Swent: They had that lined up before.

Curry: Probably.

Swent: Were there any negotiations in Sacramento that had to be done?

Curry: Not that I know of, unless they worked through the federal offices down there. We did make a cement that was supposedly a federally-controlled cement. It was tested by federal inspectors and sampled by federal inspectors.

Swent: That was another question. I wondered whether your plant design would be limited by the requirements of your sales. Dams require a different kind of cement than houses do, I'm sure.

Curry: Well, not really. A federal project requires a cement which has stricter specifications than the ordinary, run-of-the-mill cement. But that was a very small percentage of our business, the federal Bureau of Standards cement.

Swent: Do you alter your plant at all to vary what comes out of it?

Curry: Yes, a little bit. We have to be a little more careful with some types than we do with others, although all of it has to meet certain basic specifications.

Swent: And it's the same ingredients in the same proportions?

Curry: Oh, it may vary a little bit.

Swent: But you vary that at the end?

Curry: No, we vary it during the manufacture.

We had limestone and shale, which contributed to the iron and aluminum and the silica, to some extent. And the limestone itself was relatively pure.

A lot of cement plants, particularly those back East, have what they call a cement rock, which is chemically composed of most of the desired chemicals or materials that are needed. Sometimes they have to add a little bit of this and a little bit of that to bring it up to what they require. But we had basically a pure limestone and then we made up the necessary components with the shale.

Swent: And the shale was there also?

Curry: The shale was there also in a separate quarry.

Swent: Did you have to import any ingredients?

Curry: We imported gypsum and our main import was fuel, gas--we started out with oil.

Swent: Where did you get the oil?

Curry: It came from the Bay Area, Suisun. It was trucked up hot in trucks and we'd consume about seven truck and trailer loads in twenty-four hours; it was a pretty heavy user of fuel. Finally, with the PG&E's compliance, they built us a pipeline from just east of Red Bluff up through Cottonwood into Redding and fourteen miles beyond to the plant, anticipating, of course, that natural gas would be useful the whole way up, which it was.

Swent: This was available, then, to other users as well. So what happened in 1973? That was the oil crisis. I'm jumping ahead quite a ways, but you were pretty well committed to gas, of course.

Curry: Yes, we were using gas after the first eight or ten months of operation. We had this oil as a standby, which we didn't use; it just sat there in a big tank. But eventually we went back to it. When the gas got so expensive, which was after I left, they converted to coal. And then I think they used that oil up, too.

Swent: But that was after 1975.

The dust was always a problem, I suppose, that you had to consider.

Curry: The county got pretty environmentally conscious of a number of things. The lumber business was right in the middle of it too, with their tepee burners and their smoke and the cinders that were flying around. So the county established a pollution-control department in 1968 or 1970.

Swent: You were already well established by then.

Curry: Yes, but they jumped on us. We had to comply to a lot of conditions and take out a lot of permits. The water people did the same; they wanted pretty strict control of the water we were using, which didn't amount to anything. But we still had to file these reports with the county, the state, and the federal government, all essentially the same but just a little bit different. I couldn't write a carbon copy for them.

Swent: What did you have to do with this?

Curry: I had to prepare the reports and file them, bring them up to date every year.

Swent: Did you still have dealings with the county supervisors very often? Did you keep in touch with them?

Curry: Not too often; I used to meet with them unofficially a number of times, just keep in touch, make sure they knew that we were there and contributing to their tax barrel. You just had to keep them alerted to these things, you know; otherwise they'd forget about you, but we got along fairly well.

#### Union Contracts

Curry: We had no labor problems compared to San Andreas. We still had to go through the little song and dance every two years of making a new contract with the union. We had the same union as San Andreas.

Swent: So you didn't get away from that by going up there?

Curry: No. We had a less belligerent group to work with, though.

Swent: Why was that?



Curry: I don't know. I think that San Andreas had been in operation for so long that they'd established certain habits down there and they were pretty belligerent; they wanted things their way and did a lot of threatening. We were threatened a number of times by the teamsters union who wanted to get a foothold in. It just took a little bit of behind-the-backs action to keep them out and keep our "gyppies" happy.

Swent: The gyppies were the local union. What sort of thing did you do?

Curry: We made sure that we kept these gyppies happy. I tried to get around periodically and slap on the back, be a nice guy. They got their way quite a bit of the time.

Our head company back in New York, Flintkote, didn't want to go on strike and I think they made it pretty clear that, within reason, we should meet their demands. And they had a lot of them.

They wanted their two pairs of shoes a year, and all the coffee and cream that they could drink, and a little relaxation on their working hours, which sort of upset me a little bit because it's pretty hard to get them to work anyway. And when you give them coffee breaks and breaks before lunch and quitting time to clean up, why you find that an eight-hour shift doesn't really amount to eight hours. In fact you're lucky if you get six.

Then their wage rates kept going up too, and that made it all the more irritating.

Swent: You were pretty highly automated by then, weren't you?

Curry: Yes, we were, and we required a fairly good crew of electricians and mechanics.

Swent: And they were all in the same union?

Curry: Yes, yes. At the top, I had a crew of about a hundred and fifteen when we were getting started. Three shifts at the plant for the operating crew. Now the mechanics and the electricians just worked a five-day week on one shift. Since they expanded several years ago, they put on another shift in the quarry and I think that they're just working five days, too, on a two-shift basis.

Swent: That would be where the teamsters would come in, with your truckers?

Curry: Well, the teamsters wanted to take control of everybody; that was their effort. And they made a lot of promises and so forth and



what a better job they could do of representing the employees; we had to continually battle that problem.

But we had a fairly sensible group of people; they weren't about to be misled. They had things going pretty well as it was.

Swent: You had said that the first permits that you needed were to change the zoning and then were there other permits as well?

Curry: Yes, there was a use permit that we had to acquire. After we got the zoning permit that said we could put up a plant, we had to get a use permit that told the county just what we were intending to do.

#### Dust Control; Shasta County Permits

Curry: They tried to commit us to some figures on dust fallout and things like that, but we were able to sort of get by on a fairly easy basis on that until later on when the quality control people came in. Then it was harder; we had to get permits to operate our plant in a clean and healthy manner, which we did with a little bit of sweat and tears.

Swent: That didn't specify how many particles per cubic inch or anything, though, just clean and healthy?

Curry: Yes, it did, and I can't remember what the figures were. We had specific things to meet. It required an outlay of some money to install some equipment to do this.

Swent: Were you the one who decided what equipment to install?

Curry: Our engineering crew as a whole decided on that.

Swent: That was a major decision, wasn't it?

Curry: Yes. I think we spent a hundred thousand dollars on a fairly minor addition to the equipment; I remember being concerned that it would add ten cents a barrel to the cost of cement for the next ten years.

Swent: That's a lot, isn't it?

Curry: But it did the job.

Swent: Were there other permits?

Curry: The dust permits were for each department of the plant. The burning department and the grinding department and the quarry and the pack house each had to have its own permit. It was possible to get a permit for the whole plant, but it meant that if we went over on our commitment in any one department, why, we'd have to shut the whole plant down. So I finagled this plan of getting permits for each department so that if one department was affected, why, we could work on that one while we kept the rest of the plant running.

Swent: So what did you do in the quarry?

Curry: We had to sprinkle. We had to buy some tanks to hold water and we had to truck water up in tank trucks to fill these tanks and then water down the roads.

Swent: What can you do about the dust from blasting?

Curry: Can't do anything.

Swent: Nothing, just have to tolerate that.

Curry: And they seemed to accept that.

Swent: But it's the driving that--

Curry: It was fairly dusty material on the roads.

Swent: And then the second was the burning plant.

Curry: The second one was really the crushing plant. And then we went into the grinding department--

Swent: Where were the glass bags?

Curry: The glass bags were on the burning section. It took the gases out of the kiln and put them through these bags. They disbanded that particular type of dust collection equipment when they expanded this last time, which was some twelve or thirteen years ago.

Swent: 1981, I think, is when they expanded it and remodeled the plant.

Curry: That's possible. I retired in 1975. I guess that's about right.

Swent: So it did a good job for twenty years.

Curry: Yes. Expensive.

Swent: How did you control the dust then in your grinding?

Curry: We had dust collectors in the grinding sections.

Swent: Electrical?

Curry: No, they were not glass bags because we didn't have to worry about the temperatures.

Swent: And then your bagging plant was just enclosed?

Curry: That was inclined to be a little dusty too, with handling this finished cement. There were numerous canvas bag collectors in that section. We pumped all this finished cement from the grinding section in the mill through an eight-inch pipeline, blew it through to the bagging plant. And then as it got into the silos, this air that we were using for blowing purposes had to be put out through these bags, otherwise the dust would go out with it.

So that kept a fairly lively crew of dust collector maintenance people busy.

Swent: So your four permits were quarry, grinding--

Curry: Quarry, crushing, grinding, burning, and pack house; there were five of them. And separate permits for each one.

Swent: And separate dust control methods in each one. That's pretty complex, isn't it?

And these were permits that you got from the county?

Curry: Yes.

Swent: And also the state?

Curry: No, the state wasn't involved in the dust problem.

Swent: You got OSHA [Occupational Safety and Health Administration] into the act, or CALOSHA [California Occupational Safety and Health Administration], or was that later?

Curry: OSHA was the safety department; they were involved, yes. And the state had a state division of safety, too.

Swent: And they weren't concerned with dust?

Curry: They didn't seem to be. They were concerned with the health of the people and not the dust problem.

So we had those two people dropping around at least once a year or maybe oftener.

Swent: Did you have any accident problems?

Curry: We had a few. With that type of automated plant, why, it was hard to control people from doing things that they shouldn't.

All the belt equipment was started up from a central control room and when they started up a particular belt in an out-of-the-way part of the plant, they'd sound a siren; people were supposed to be alerted that equipment was going to start up. This happened in the crushing plant too; that was all controlled from the control room with the screens and the crushers.

And we had somebody that got caught in the belt one time and damaged his leg. Nobody was ever killed.

The Portland Cement Association also had their accident prevention group who kept tabs on us. And we ran one time for a thousand days without a lost time accident, which we thought we were doing pretty well at. Then we had to present a few little prizes to the right people for that by drawing their names out of a big barrel. We gave away a car one time for that program.

Swent: That's a significant prize!

Curry: Yes. And then we had savings bonds and various other little goodies.

Swent: These were incentives for safety?

Curry: Yes. You had to make them work at it, otherwise they'd get careless; you had to give them something to strive for. So we had a fairly good accident record.

Swent: What about the Cement Association; was that the only one that you belonged to?

Curry: That was the only cement association we belonged to. I think we belonged to the American Mining Congress and a number of us belonged to the AIME.

Swent: There's a Northern California Aggregate Association; were you part of that?

Curry: No, we weren't a part of that. I think maybe our sales department might have been involved in that. I used to get a *Rock Products* magazine periodical, but the plant had nothing to do with that.



Swent: Your only product was cement, then. Did you ever go into fabrication of anything? Block or pipe?

Curry: No, no. We had a program at one time to make extra-high-strength cement by using a lot of boron. It supposedly made cement at a lower temperature in the kiln, but it was very touchy; I don't think it was ever very successful.

Swent: Where were you getting the boron? Locally?

Curry: No, it seems to me it was shipped in from abroad somewhere, I can't remember exactly. Africa or Egypt or someplace like that.

##

Swent: Another question that I had was the radius that you could serve from your plant. That's always kind of a touchy question, isn't it, with cement?

Curry: Yes. I don't know just how they operated that. The sales department must have had a hand in that somehow, because we'd see competitive cement buzzing by our front door quite often. I don't know the fine points of pricing cement out.

Swent: You had nothing to do with that?

Curry: No. We shipped cement by rail over to Reno and distributed it out of there to all points. A lot of our cement went by rail up into Oregon, to transfer plants. We had a big transfer plant in San Leandro. San Andreas shipped to Oakland when they were in operation. But after San Andreas shut down, why, we took over their market pretty completely.

Swent: Did San Andreas shut down soon after you opened up?

Curry: No, no. They were operating at the time I retired.

Swent: I see. So both plants were going?

Curry: Yes.

Swent: Did you ever have any dealings with the Meins?

Curry: Just socially. Mr. Tommy Mein, who I saw yesterday for the first time in fifteen years. Tommy used to come up periodically and stay at our guest house and Mr. Mein, Sr., was up once or twice. He was not too active. And then Flintkote came along and bought Calaveras out. In fact, I think the construction of the Redding Plant was

pretty much predicated on Flintkote taking over, because Flintkote was pretty well active in things when I went up there.

Swent: Did you have much autonomy in running the plant?

Curry: No.

Swent: Where did the orders come from?

Curry: They came out of San Francisco.

Swent: And that was Flintkote?

Curry: Flintkote operated the San Francisco office. It was called the Calaveras Division. Calaveras had the San Francisco office under direct orders from White Plains, New York. It was a little confusing.

Swent: It must have been quite different.

Curry: Any projects had to be first approved by San Francisco, who had to go to New York for the final approval. So anything we wanted to do, we just sort of had to sit and wait for everybody to study it, which is I guess the way it should be.

Swent: Maybe. What kinds of things, for example?

Curry: Oh, any modifications that we might want to make or any decisions as to purchasing big equipment. We could buy most of the little stuff without too much problem. The grocery store items, we used to call them.

Swent: What were they?

Curry: Oh, we'd order our own gypsum and we'd get grinding balls and ordinary stuff that we put in the warehouse, nuts and bolts and nails.

Swent: What kind of balls did you use?

Curry: They were steel balls. We used two sizes; one was about a three-inch ball and the other was about a one-inch. We'd feed those into the ball mills.

Swent: They were local?

Curry: I don't remember where they came from.

Swent: Did you have a lot of vendors coming around?

Curry: The big vendors went into San Francisco. We had agents that were basically committed to engineering who dropped by periodically to see how their equipment was working and whether we needed any more of the same.

Swent: Were they helpful to you?

Curry: Yes, as a rule. Most of them were helpful; some of them were nuisances.

Swent: In what way?

Curry: Well, they'd want to know whether they could sell us big, heavy equipment. We had powder salesmen that were always trying to commit us to buying their brand of explosives. But that's just part of the game.

#### Unique Downhill Conveying System

Swent: What kind of trucks did you use?

Curry: We had a fleet of about four haulage trucks, Euclids. They held thirty tons. We could usually get by with just about two or three of those in action at a time. We had a very short haul from the quarry face to the crusher, which was located up on the mountain. Are you familiar with that plant up there?

Swent: No, I'm not.

Curry: Well, it was quite unique in the way that we transported material to the plant. We'd haul in a truck down to the crusher that was located at the top of the mountain. That crushed the material down to six inches in size and dropped it down a vertical shaft that was five hundred feet deep, and that was picked up on a belt that went into the mountain directly below the shaft. And this tunnel was seven hundred feet. The belt line came out of the tunnel and transferred into a downhill belt that carried it into the plant; it was a mile and a third in length, total. And it dropped in elevation from about twenty-five hundred feet to a thousand feet, which was the plant location. I heard recently that one of the three belts had to be replaced after approximately thirty years of service.

I wrote a paper on that [conveying system] for the AIME at one time. Then I presented it at a meeting down in Los Angeles.\*

Swent: So you actually sank a shaft.

Curry: What they did was raise the shaft. They built the tunnel first and then went into the tunnel and raised on it. I remember trying to put a drill hole down, but it kept wandering. Instead of going straight down, why, it had a tendency to veer off and we gave up on that.

So the Swedes had developed an Almack raise climber, which was a device that attached to the side of the raise as it went up, and they put up a working platform on this thing; it would climb up this track to where they were going to shoot the next round, and then when they got it all ready to shoot, they'd lower this platform down and tuck it back in underneath the tunnel where it wouldn't be damaged by the rock coming down. And that was one of the early uses of that Almack raise climber.

Swent: So you were still doing a little underground mining in the course of this. That's interesting. But this was, I suppose, cheaper and easier than putting up an outside facility.

Curry: Yes, that was brought forth in this article I wrote, that to put in a truck haulage road to meet the required grades and the number of trucks that it would have taken, would take quite a fleet of trucks, plus the drivers.

Swent: What about water? Was the source of water a problem there?

Curry: We didn't use much water, of course, this being a dry-type plant. The only water we used was for cooling purposes, and we did squirt a little spray of water into the end of the kiln to lower the temperatures so that those glass bags wouldn't burn up. And that worked successfully. But that was the only water we had to use.

But for cooling purposes, we used compressors for blowing the cement out, which had to be water cooled. The ball mill bearings had to be water cooled, the trunions on the kiln were water cooled. And that was all circulated to a reservoir up on the hill where it was put up in a spray to cool it.

Swent: This wasn't a major problem, then?

---

\*See appendix.



Curry: No. We had a terrific amount of rainfall up in the Redding area at the plant. It got up to eighty inches one year. In fact, it got up to ninety, one heavy year. And that would create a few problems in mining.

Swent: In your quarry, wouldn't it?

Curry: Yes, and an occasional snow storm that would slow us down a little bit.

Swent: Was your plant under a roof?

Curry: The plant was under a roof, all except for the kiln, which was exposed. Yes, we had quite an enclosed craneway where we kept crushed, raw feed and cement clinker.

Swent: So the rain wouldn't bother you with that.

Curry: Yes, that was pretty important.

Swent: How about ready-mix? You never got into that.

Curry: We had a few ready-mix customers, but we didn't produce any of it ourselves. No, we just produced cement, let other people worry about--

Swent: --what to do with it.

Curry: Sometimes we got the blame for the poor way they handled it, but other than that, it was all right. Ready-mix people always like to use a lot of water in their trucks, and that's sort of a no-no in the concrete business.

Swent: Does it make it cheaper if you use water?

Curry: Not necessarily. It makes it easier to handle; but actually, you add just a certain amount of water to start the hydration process going, and anything in excess sort of weakens it. So we'd get complaints about our cement, where we'd find that most of it was determined by the amount of water the ready-mix people were using.

#### Computers, Spectrographic Analysis

Swent: Was the computer automation coming in at that time?

Curry: Yes. The automation part came in later, after I had left, but we were using computers in our lab to help figuring the chemical composition of the mix. And it was a godsend, too; we'd get results so much faster.

We'd run a cement analysis by using a spectrograph and taking the results of the spectrograph and shooting them through a computer and that would tell us what corrections we should make as we were going along.

Swent: This was in your mix coming into the plant?

Curry: Mix in the plant going into the kiln.

Swent: Where did you sample?

Curry: We sampled mainly the raw material as it was being ground, and run these analyses on silica, limestone, alumina, iron. We'd get the results pronto. This was during the grinding process, and if the composition was a little bit off, why, we'd find out about it almost immediately. Through the computer, why, we'd make the corrections for the next hour's run. So it was good. Otherwise, they'd have to run these chemical analyses by the wet process and it would take maybe four hours to get an answer.

Swent: And in the meanwhile you'd be turning out something that wasn't quite as good.

Curry: Yes, something that had to be corrected.

Swent: Was this equipment expensive?

Curry: Yes. General Electric made the spectrograph, which was an X-ray type machine, and I've forgotten what that cost, but they don't come cheap. And then the computer was pretty basic; it was one of these punchboard things that ran a tape out. The tape had to be fed through a readout machine. They've gone so much further in the last ten years on computers that I can't keep up with them.

Swent: I just picked up somewhere the word weightrol. Some cement plant was using a weightrol system, but I wasn't sure if it was yours or another one.

Curry: It was probably another one. I know what it is; one method is to put this thing onto a conveyer belt, which will weight the amount of material going over on a continuous basis. We never had one of those.

Swent: But you were pretty up to date.

Curry: We were at the time, but we went out of date pretty fast, I think.

Swent: It doesn't take long.

Other Cement Plants: Japan, England, Albuquerque

Curry: The Japanese taught us the way on a lot of these things. Japan, for all of its lack of resources, is probably the second or the third largest cement producer in the world. Everything they do over there is made with cement--railroad ties and everything else.

They developed the manufacture of cement down to a fine point. I think we picked it up later. In fact, the expansion that led into the Redding plant had a lot to do with preburner heating processes. They developed a method of using the waste gas out of the kiln to heat the incoming material, which saved an awful lot of energy and fuel.

Swent: And that was the Japanese?

Curry: The Japanese did a lot of that, yes.

Swent: Did you visit other plants?

Curry: I visited some in this country and that one in England that I was telling you about, which was fun.

Swent: Tell me what you thought about that one in England.

Curry: Well, they were strangely enough putting a computer into their kiln operation. But the rest of the plant was quite obsolete and old. They had lots of manpower, lots of labor, and they were paying their help an average of seventy-five cents an hour at that time. The manager was complaining about his labor, and I couldn't give him much sympathy when I found out that seventy-five cents an hour was a basic wage.

Swent: And this was in the seventies?

Curry: No, that was the late sixties, I guess.

Swent: Where was it?

Curry: It was at Rochester over on the east of London, down near Canterbury. The manager took me out to lunch at the Leather

Bottle, which was one of Charles Dickens's hangouts, so I was quite impressed with the antiquity of the place.

They were loading cement out for shipment overseas to the Continent, I guess, in what they called the English hundred-pound bags, which actually were a hundred and--it was the metric system, really, and the bags were a hundred and twelve pounds, which I thought were getting a little heavy for my size. The cement bags in this country were ninety-six.

Swent: That's a difference.

Curry: But they didn't have much in the way of dust recovery. The stacks were putting out quite a volume of dust.

Swent: Was the cement about the same?

Curry: Yes, I think so. It had to meet certain specifications. I don't know that they used our Bureau of Standards qualifications, but they had some of their own, I'm sure.

Swent: Of course that's where it started.

Curry: That's right, on the Eddystone Light.

Swent: I had read that mothers used to bring their children into the kilns to breathe the fumes because it was supposed to be helpful in England. [laughter]

Curry: Well, maybe they didn't live very long anyway.

Swent: They didn't have that problem in Redding, mothers bringing their children around.

Curry: No, thank goodness. [laughter]

Swent: Well, we don't have whooping cough anymore, so that's no use for your kiln fumes.

Did you visit any other plants here to copy their methods?

Curry: Yes, we did. Lone Star had a plant in Albuquerque, the Tijeras. We used a lot of their ideas. The cement engineering company that built that plant was the same one that built a lot of our plant, so I took a plane load of county people down there early in the game to show them what a good job that plant was doing so that they'd get a feeling for what we were going to do.

Swent: That was good public relations.



Curry: Yes. We had a company plane at that time, so we took three members of the planning commission and three supervisors down for a day and a night.

Swent: That was very effective, I'm sure.

What did you use the plane for?

Curry: Oh, that was for getting back and forth between Redding and San Andreas. The sales department used it a lot for customer work.

Swent: You had your own pilot?

Curry: Yes. It was quite handy, but I don't think Flintkote appreciated it, and they eventually wrote it off.

Shasta House was also very helpful for entertaining and for training sessions. They'd bring in people from the cement industry, ready-mix people and county and state engineers, and put them through a course that took a whole week. They'd keep them there at Shasta House. That was one way of teaching the ready-mix people how to use our product without damaging it.

[Interview 3: June 13, 1990]##

Swent: We are continuing our interview on the thirteenth of June, 1990, in Piedmont, California.

You went to Redding in 1959, didn't you?

Curry: Right. 1959, in June.

### Tunneling Under the Freeway at Redding

Swent: And that's when the California Highway Program began to really take off. There was a California Freeway and Expressway System and a Master Plan for State Highway Development that was all just being worked on in '59.

Curry: Right. As far as we were concerned, it extended from the Oregon border down the valley through Redding.

Swent: What kind of highway was there when you first went there?

Curry: It was divided, one-way in each direction. It was not a freeway in the freeway sense of the word. It had lots of intersecting roads

that came into it. And it was pretty busy at that time, with all the trucking that was taking place. The new divided two-lane freeway--and three lanes, in part--was quite an improvement. Fortunately, we were able to find a use for our cement in supplying the contractors.

Swent: You had one quarry on each side of the highway; was that it?

Curry: Our limestone quarry was on the east side of the freeway, and the shale and silica quarry was on the west side. We had to run trucks back and forth. We were mining limestone most of the time, because that consisted of 70 percentage of our usage.

Swent: And where was your kiln?

Curry: The kiln was on the west side of the freeway. So, in order to get this limestone down to the plant, we had this belt system built where we had tunnels under two secondary roads, and one big one under the main freeway. As I mentioned, the tunnel contractor said that he had to use a chainsaw to get through some of the buried stumps that had been left in the right-of-way by the contractors.

Swent: They're not supposed to do this, I assume?

Curry: No, definitely not. So the inspector must have been asleep while that was going on. It took the chainsaw to get the lumber out of it. The tunnel was there to run our conveyor belt through, as well as a lot of the utilities that were involved, power lines and whatever was required to get the operation at the top of the hill in business.

Swent: This would involve an awful lot of planning to decide whether to do a tunnel under a freeway or do the other things you could have done.

Curry: The whole project in that system involved a lot of study. There were various plans like truck haulage clear down to the plant.

Swent: And I think I read that it would have involved twenty trucks?

Curry: Something like that. Another plan that was really considered was just dumping the limestone down off the side of the hill and picking it up at the bottom, but that wasn't very feasible, so we avoided it. We knocked that one out of the system early on.

Swent: Did they think of an aerial tram or an aerial belt, for that matter?

Curry: Aerial tram, I think, has got a lot of limitations. I don't think it was considered.

Swent: Or an aerial beltway?

Curry: That's even worse, I think. That would take a lot of fancy engineering and, I think, quite expensive.

Swent: If a rock ever dropped off onto somebody's windshield--

Curry: That would be pretty bad. Yes, this involved a distance of about --I think I mentioned in that article--about a mile and a half, something like that, in a direct line. So an aerial tram traveling that distance and that elevation would be pretty expensive.

Swent: There was an article in the Redding Record-Searchlight in January 1960 that said that a four-lane highway from Redding to Red Bluff was now close to a certainty. The headline says, "Construction may be Started by 1961." So when were you digging your tunnel?

Curry: That came along fairly earlier. I think, about 1960-61.

Swent: As they expanded the highway, did you have to expand your tunnel?

Curry: No, we built the tunnel with that in mind, so everything was in place for the freeway when it was built. We built it with an extended--extended each end of the tunnel to accommodate the freeway.

Swent: And then cement from your plant was used to build the freeway, was it?

Curry: Right.

#### Pit River and Oroville Dams

Swent: That was a big market for concrete in those days.

Curry: That and all the dam construction that was going on. PG&E was pretty busy building dams on the Pit River for their powerhouses. Pit Six and Seven, I think, came along during that period. So that took a lot of our cement. Also, we put a lot of cement into the Oroville Dam when it came along. That was quite a project, too. One of the parts of that project that interested me was the fact that they had to use ice. They had to manufacture ice for mixing

the cement, because of the extreme temperatures in the valley at that time of the year.

Swent: Was this summer?

Curry: Yes. And I think the specifications that the Bureau of Reclamation put out stated that the concrete couldn't exceed a certain temperature when it was being poured. That would keep it from setting up too fast. So they had icemaking machines there that were continually making ice to put into the mix.

Swent: To slow it down, to slow the setting.

Curry: Yes.

Swent: I've never heard of that. Is this something that's often used?

Curry: I think it's quite common. Most of the cement has a residual temperature from the manufacturer, and they like the cement companies to make it as cold as they can. Sometimes, they can't make it cold enough, so then the poor old contractor who's making the concrete has to revert to this ice business.

Swent: So when you manufacture cement, you have a temperature range that it will--

Curry: Well, we try, yes. Sometimes, you can't guarantee that temperature. In the wintertime, it doesn't seem to be a problem, because there's not that much ambient temperature to worry about.

Swent: The Oroville Dam is still there, so I guess it worked.

Curry: Yes, still there. They put a lot of concrete into that. I don't really know the volumes, but we were pretty busy hauling it down there.

Swent: Were you the only supplier?

Curry: I don't think so. I think it was a mixture of several suppliers.

#### Shasta County Air Pollution Committee

Swent: This is another article from the Redding paper. This, again, is January 1960, but it tells about a meeting that you and some other cement men went to for the Shasta County Air Pollution Committee,



and there's an Edmund Shea of the Shea-Kaiser-Morrison gravel plant. That was just gravel?

Curry: Just gravel, sand and gravel.

Swent: They were also supplying cement for dams, weren't they?

Curry: Kaiser was, yes. That came up from the Bay Area.

Swent: And then there was somebody--George Wolf from the J.H. Hein Company.

Curry: I don't remember him.

Swent: All three of you were on the mat. There was another, Rex Kettlewell of the Kettlewell Transit Mix Company. That would be ready-mix?

Curry: That's ready-mix, yes.

Swent: So the three of you, and then this other person, were all trying to defend your smog control. They call it "smog control." It really was dust control, wasn't it?

Curry: It was dust.

Swent: You were explaining that your plant was still under construction, and you were spending in excess of \$100,000 to control the dust. The Shea-Kaiser-Morrison people were spraying.

Curry: That was at a period of time when Shasta County was just getting involved in air quality control. The lumber people were also taking their licks from the county, as far as the smoke and ash were concerned. And, eventually, they had to discontinue the use of the tepee burners, where, you know, they used to burn all their sawdust and slash. It was pretty messy. So that, along with ourselves and these other people, were involved in these discussions.

Swent: But you were going in with your controls before you were actually in production. You were conscious of this.

Curry: We were aware that this was happening. In fact, even during our construction, we were doing a lot of blasting in building roads and getting ready to develop this limestone deposit. We were pretty much in the public eye, as far as being a nuisance is concerned.

Swent: But you went in and talked about it. You didn't wait for people to attack you.

Curry: Well, I think it was about even.

Swent: Was it? I thought you were going out and trying to educate them before they got mad.

Curry: Well, I was trying to tell them just what we were up to. Of course, we didn't dwell too much on the problem that we were sure to face. But they caught up with us. It was kind of fun. [chuckles] Part of my education of the public was the sixteen-millimeter film. I think I may have mentioned that.

Swent: I think you did, and you had to cut part of it, I think you said.

Curry: Well, it started out with a picture of a great, big blast at the San Andreas plant. [laughs] I didn't think that was very good advertising, because the dust problem was quite vivid.

Swent: Did you ever get together with any of these other people?

Curry: Well, yes. The county people tried to establish a set of standards which we were supposedly to live up to. We would always get together with the county people as a group.

Swent: I meant with these other sand and gravel people. Or were there enough other people where it would have been helpful to form any sort of an association?

Curry: No, no. We just met on an informal basis.

Swent: You were the biggest one in there, though, anyway, weren't you--in the cement business. You were the only one?

Curry: We were the only cement people, yes, but the sand and gravel people were involved. A lot of their problem was with noise, as I recall. They had a very noisy crusher on their property that the neighbors objected to, particularly at night. I don't blame them.

Swent: You just mentioned that when you were in San Andreas, you joined Toastmasters.

Curry: Yes, I found that quite helpful. I had a little trouble standing on my feet and speaking out, as I still do. But quite a few of us joined that from the plant down there, and it was very helpful. We would get together once a month and go through this course that they presented. I found that when I got to Redding and had to get up before these people I wasn't as bad as I thought I would be.

I mentioned the "ah" problem, too, didn't I--where the person that stuttered and stammered and threw in a lot of "ahs" got a

trophy, which was a stuffed frog, representing the Calaveras jumping frog program. That was passed around. I gave it up occasionally to other people. [laughter]

Swent: It wasn't the kind of trophy you wanted to see. [laughs] But that would be very good training.

Curry: Yes, it was, and they got a couple of groups going up in Redding when I was up there. I didn't join any of them, but I got invited to the dinners once in a while. They had an early morning one, and I remember one of the supervisors of Shasta County was a member. He told me that he found it quite helpful, too.

Swent: Well, they have a lot of fun, too, don't they?

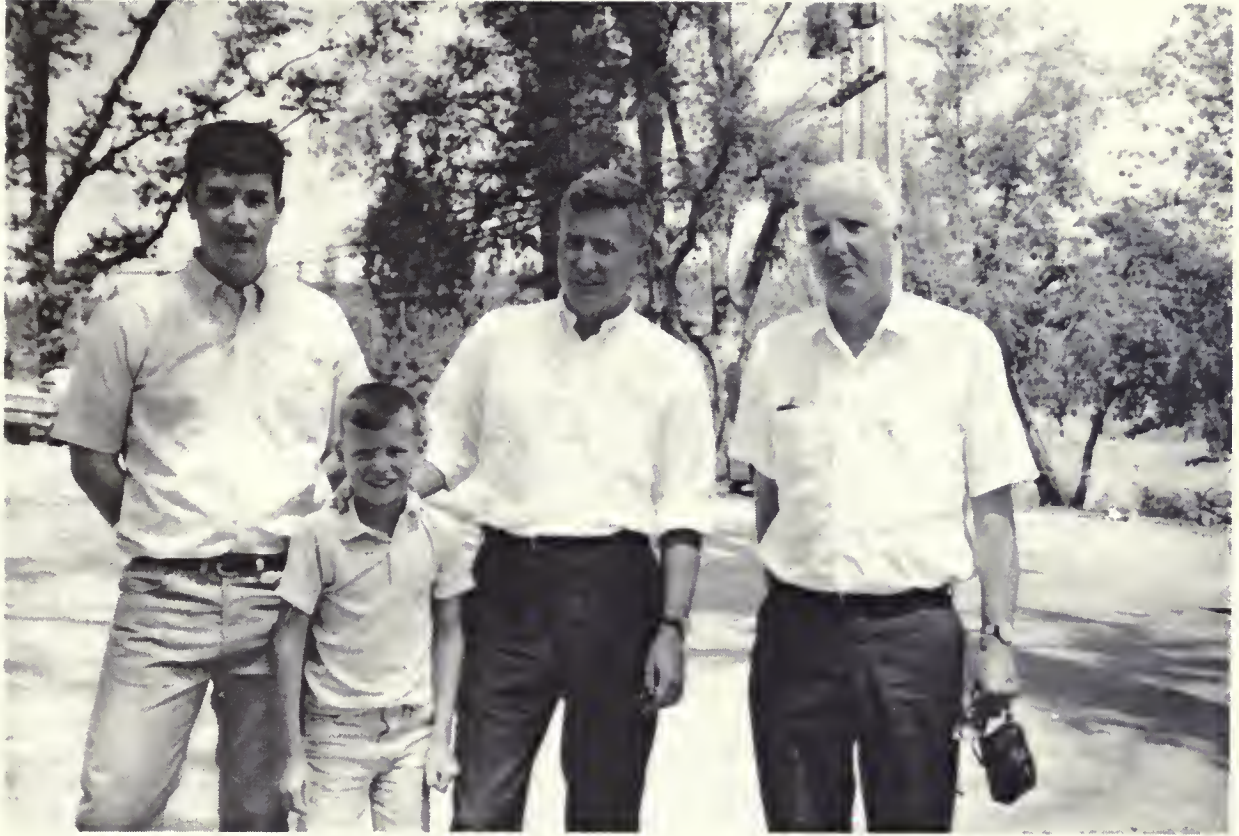
Curry: Well, yes, they do. They have their family nights where the wives can come, and the occasional picnic. It's sort of like the Rotary Club.

Swent: But they do give people good practice in speaking, don't they?

Curry: Yes. They have a regular course that you go through, and they start you off fairly easily. Then they build it up to where it becomes sort of a contest between the various clubs. The winner of all gets some sort of a prize--I've forgotten what. But I never got into that group.







David S. Curry, James T. Curry III, James T. Curry, Jr., James T. Curry, Sr., 1968.



## VIII FAMILY, FRIENDS, TRAVEL

James T. Curry, Jr.

Swent: I wanted to know a little bit more about what your family was doing in all these places. Where did your boys go to school? Where did Jim finish high school?

Curry: Jim finished high school in Nevada City and then went on to the University of California. Jim was a good student. He got good grades. He earned a few scholarships along the way, which was quite helpful. I mentioned his Bank of America thing. He was a bit of a procrastinator. We always wondered whether he was going to get his work done on time. Many a night went by where he was up till two in the morning finishing something that he had had months to do, but he put it off.

Swent: When did he begin to show signs of wanting to be an engineer?

Curry: Well, I can't remember just when he acquired that desire. He was always a good mathematician. I remember he got into a course where he had to design a house and put it down on paper, with a number of pages on the kitchen and living room.

Swent: In high school?

Curry: Yes.

And then, in the summertime, he got a job at the Empire Mine one summer vacation. Another summer vacation, he got a job in town with the local surveying company, where he did a little drafting. He didn't do much field work at that point, but, I think, his first year in college, he got a job at Winnemucca, Nevada, on a survey crew. So he was pretty much on his way, I guess, as an engineering student.

Swent: You must have been pleased. I think it's always flattering when a son follows his father.

Curry: Well, he followed a little more than I did, but he enjoyed it. He had another job one summer vacation, during his college years, as some sort of a control supervisor, I guess, on a plant project down in Hayward. That involved his commuting. He also had a summertime job on the Tri-Dam district out of Sonora, where they were building dams. He was a cement controller. I remember he had to disprove a couple of loads of Permanente cement one time, which I didn't think was all that great, because all they did was buy some more, and it was the same. [chuckles]

Swent: This was after you had gone to work for Calaveras?

Curry: Yes.

After his college, he went into the army as a reserve--I guess, an ROTC second lieutenant--and spent not quite two years. Then he went to Stanford and got his master's degree in business administration. He jumped out of that and went to work with Utah Construction; been with them ever since.

Swent: The rest is history, as they say. He is now president and chief executive officer.

Curry: We pulled David out of school. David was nine years younger than Jim, and we pulled him out of grammar school in Nevada City when we moved to San Andreas. He spent his three years in the San Andreas school system. Then he went up to Redding and got into their Shasta High School and spent his four years there.

Swent: So that's where he finished.

Curry: Yes. Both of the boys were quite conscientious in studies. It didn't come as easily for Dave as it did for Jim, but they both had jobs during their school years. Jim worked in the Alpha Hardware in Nevada City for a while and also carried bags around for the customers in the National Hotel; spent some time in a printing office up there, making greeting cards, Christmas cards. Dave worked for J.C. Penney while he was in Redding. After our first trip to Europe, why, we had to cut it one day short so he could get back to work when he should have. [laughter]

#### First Trip to Europe. 1962

Swent: So your boys did some traveling with you, too?



Curry: We took Dave to Europe in 1962 at the beginning of our European travels, along with Grant Metzger's oldest son. So they kept each other company for five weeks while we were traveling around through Europe. That was an interesting trip. We had the American Express company plan an itinerary around what we wanted to see, and they arranged for the hotels and the air travel while we were over there. They even arranged for a car rental for us in Scotland. Most of the time, we just traveled by air, from Rome, to Switzerland, to Paris, to Denmark. When we got into Scotland, we had a car waiting for us, which was my first experience in driving on the left-hand side of the road.

Swent: That's courageous.

Curry: We drove from Prestwick to Edinburgh with great hilarity, starting out by driving across the runway in Prestwick, because that was the only way out of the place.

Swent: How old were the two boys?

Curry: That was '62. Dave was born in '45. He must have been seventeen.

Swent: What a wonderful experience.

Curry: They were both good company, and we enjoyed it. Our car, we picked up in Scotland and drove up to Inverness and then back down to Glasgow and then into Oxford and London. So by the time we got to London, we were pretty adept at driving on the left side of the road. No trouble, no accidents. The accidents came later when I would get too smart for myself. [chuckles]

Swent: Did you have accidents later?

Curry: Oh, nothing serious. I backed into a little car one time in Warwick, I think it was. It was a little British car that was so small I couldn't see him out of my rear window, and I was backing into a parking place, and he was there. So I put a little dimple in his front fender. But he was quite nice about it. I asked him how much he thought it would cost, and he said, oh, he could paint it and get it in shape for about ten pounds, so I gave him ten pounds on the spot. We shook hands, and that was it. But it was rather embarrassing. [chuckles]

##

Swent: So this was your first European trip?

Curry: That was our first trip. Yes, we saw a few things by virtue of American Express and their kindness in setting us up with the city tours of Paris and London and Denmark.

Swent: You started in Rome?

Curry: We started in Rome.

Swent: That's quite a tour.

Curry: We saw things that we would like to see again, so we went back later on our own and saw what we wanted to, along with other things. We always like to travel by car. We started out early without making reservations, which sort of bothered my wife a little bit, but we never had to sleep in the park.

Let's see. I think our second trip was a month that we spent in London. We found a nice little flat down in Chelsea, and we made that our home for a month. We traveled out of there for a couple of days. We rented a car and went to the East Coast, to Hastings and Battle. Did I mention before that I had gone through a cement plant there?

Swent: You did mention the cement plant, but there might be more you wanted to say about it. You thought it was pretty antiquated.

Curry: Yes, I couldn't think of anything that wouldn't be repetitious. The manager and the sales manager and the plant manager were very kind and drove me around the area a bit--saw one of Dickens's old haunts called The Leather Bottle which I may have mentioned. I think he mentioned it a time or two in some of his writings, about The Leather Bottle. And a little old church right across the street from The Leather Bottle had a collection of old brasses that were laid in the floor of the main aisle and were covered at that time with a thick, red carpet so that it would protect them. The manager knew all about that, so he peeled the rug back so we could see them. That thing must have gone back to the 900s. Immensely interesting. Fascinating. I've gone back there since. I took Nancy the next time, and we had another little lunch at The Leather Bottle.

Swent: You mentioned that the weights were different, that they used a different-sized bag for cement.

Curry: That's right. The English hundred-weight was equivalent to 112 pounds American.

Swent: But other than that, the cement was similar to what you worked with here.

Curry: I think so. They have certain standards that they have to measure up to, I'm sure.

Swent: It's always interesting to visit something like that, that you're familiar with.

Curry: Yes. They were antiquated in many respects, but they were involved in setting up a computer, which seemed incongruous to me, to see such modern equipment alongside of all this older junk. They had lots of people working for them. It required a lot of mechanical help, whereas the newer plants, you know, are all automated. This thing was run pretty much by hand.

Swent: It hadn't been destroyed by the war.

Curry: No. I don't know why. It was about--I guess that was thirty miles from London, something like that.

Swent: Did you ever visit any cement plants on the Continent?

Curry: Well, I mentioned that I tried to get into a cement plant in Switzerland, but it was early Monday morning, and they were probably busy catching up with all the problems that had developed over the weekend. They didn't speak English, so they weren't too interested in me. [chuckles] It was a tidy little plant. I would like to have seen it. But I couldn't push myself on them.

Swent: Near Interlaken, you said.

Curry: Yes. I think I made a note of that in the diary that I was writing at that time, but I've forgotten it. Nancy mentioned that she was getting her hair done that same day, and that's why I just sauntered down to this plant, which was out of Interlaken about four or five miles. She couldn't find an English-speaking lady to fix her hair, either.

Swent: You've made a number of trips back, then, to Europe.

Curry: Yes. We've made a habit of going somewhere every year. I think we missed one, but we've been to France, Germany, Italy, England.

Swent: You started in '62. That's a lot of traveling.

Curry: Well, we've been to Australia three times and New Zealand, Fiji, Tahiti, Jamaica.

Swent: You mentioned the Mechanics' Institute.



Curry: We joined the Mechanics' Institute primarily for their charter flights.

Swent: This is in San Francisco.

Curry: Yes, and we availed ourselves of that several times. They would put one or two trips together every summer or every spring and fall, and they would fill a DC-8 or 707, and off they would go. It was usually a month each time. They would normally fly to London and then pick you up a month later, either in Rome or Paris.

Swent: And that was from San Francisco to London.

Curry: They would stop in Montreal for fuel and then take off. We took the kids once, Jim and Barbara, and spent a month over there. That was the time they were having student problems in Paris. They shut the airport down. In fact, our plane, one time, from England to Switzerland, which normally flew over part of France, had to bypass it because of the lack of air control. So we had to fly around France, and it took a little longer. I don't know which direction we went--probably around through Brussels, Belgium. At that time, we spent about a week in England, wound up in Scotland, and then Jim and Barbara took off on their own to Germany, and we met them about a week or ten days later in Switzerland and carried on the rest of the trip from there. They were still having trouble in France at that time, and we were supposed to pick the plane up in Paris. But they told us that Paris airport was shut down, so we moseyed up to Frankfurt and picked up the plane at the Frankfurt airport. By that time, we found out that Paris airport had opened up, so they flew back down to Paris and picked up a few strays that were supposed to come home with us, and we went on from there.

Swent: What year was this?

Curry: That was probably about 1965 or '66.

Swent: So that was one of your early trips.

Curry: Well, yes. Let's see. I mentioned the first trip was in '62. We went back in '64 and spent that month in London. Then, I guess, it was either '65 or '66 that we went back. Jim was working in Farmington for Utah, at their coal deposit. They had three children at that time, and they dumped them off with their other grandparents in Grass Valley and took off with us. We had a great time.

Swent: At some point in here, I wanted to say something about your very interesting family. I think of you as in the middle of a network



of people that go every place in mining. Your father, you said, was from Carson City?

Curry: He was working in Carson City when he met my mother.

Swent: Right. So there you've got a Carson City connection, and, of course, your uncle, Fred Searls, was the big man in northern California mining. And your father-in-law, John Sherwin, was intimately connected with Borax Smith, who was the big man in southern California mining. You were at the Empire, which was the last big gold mine in California, and then from the Empire you moved on into the new frontier--

Curry: Cement. [chuckles]

Swent: --which was industrial minerals, and your son is the head of BHP-Utah, which is a modern giant international corporation.

Curry: Well, you're right. There are a bunch of us diggers involved. Isn't that right?

Swent: Absolutely. You've got connections with almost everything in the mining world, haven't you?

Curry: Well, you meet a lot of interesting people.

Swent: Do you have any connection with Alaska?

Curry: No.

Swent: Did Searls ever get up there?

Curry: Oh, he must have, but I don't think of any mining activities that he was involved in.

Swent: No, I think maybe that's about the only thing that's missing.

Curry: But he was rattling around all over the world.

Swent: Yes. Well, he had African connections, too, didn't he?

Curry: Yes. O'okiep Mine in Africa was a big one.

Swent: And you did work on the Toquepala-Cuajone Southern Peru project.

Curry: Yes. That was interesting. I enjoyed that. It involved a lot of flotation work. It kept me busy for about six months. And you were down there.

Swent: We went just to visit. One of our good friends was a metallurgist there--Leonard DeJong.

Curry: Don't know him. Jim has a big project in South America, too, you know.

Swent: Escondida.

Curry: At Escondida, and he said that's coming along great.

Swent: Have you ever been down there?

Curry: No, I haven't. I'd like to.

Swent: You didn't ever get to South America?

Curry: Never got there.

Swent: Well, plan another trip.

Curry: Never got to Happy Camp, which was another copper.

Swent: Where is that?

Curry: That's on the Klamath River. Frank McQuiston and I did a lot of the metallurgy on that during World War II, and a lot of our cohorts went up there. I never got up there, but I understand it wasn't really a happy camp, after all.

Swent: Did you ever get to Africa in your travels?

Curry: Never got to Africa.

Swent: I guess those mines are really something to see.

Curry: Jim is involved now in a gold mine in Mali, which is in western Africa. I guess Broken Hill is half owner, and the government of Mali is the other half. He says it's very primitive, and a lot of the people are still wearing their robes and their headgear, living in mud huts. He mentioned that all the supplies have to be brought in. They generate their own electricity. They have to import the fuel oil for the diesels, but they're making gold. He says they're turning out quite a bit of it. He said a lot of the skilled workers are Filipinos. I don't know how they imported Filipinos for the job. That's what they've got.

You wanted me to mention some people that I've been connected with. Art Stauber, you mentioned, who was a great help to me as my assistant manager and mill superintendent. We worked together for

the sixteen years in Redding, and he took my place when I retired and then went on from there to the head office in San Francisco. The ownership changed several times. Flintkote sold out to a Canadian company. And then, I think, the Belgians got into the act some way.

Swent: So you didn't have any problems grooming a successor.

Curry: No. In fact, he was the engineer of the group. He could solve all the difficult engineering problems that developed.

Swent: That can be one of the most difficult things. You were spared that.

Curry: Another one of our cohorts early on was a gentleman named Joe MacNamara, who was a mining student at California and came up to Grass Valley with his young bride and went to work as a mucker in the North Star Mine. That seemed to be the progression in those days. They worked underground shoveling and then worked their way up. Joe went back to college to get a couple of courses he missed just about the time the war broke out. He never came back.

He went to work in the oil fields around Bakersfield. His father-in-law happened to be president of Standard Oil at that time, but that didn't get him into the head office of Standard Oil. He started out on the oil rigs down in Bakersfield. War came along, and he got in with North American Rockwell and went hither and yon with them. He wound up building airplanes in El Segundo, finally became president of North American Rockwell's aerospace division and was involved in the space shuttle program. He retired once, and they called him back to manage the shuttle program. He was making shuttles for NASA. He took us on a little trip one day down in Los Angeles by helicopter from the top story of his office building down to wherever they were building that thing, out near the desert. We got to see the shuttle being put together.

Swent: And he started as a mucker at the North Star?

Curry: He started as a mucker in the North Star Mine and then became an assistant engineer at the Empire at the time he went back to school.

Swent: And he ended up making space shuttles. That's something.

Curry: Yes. We did a little traveling together. We met them over in England one year and went to Wales and to Ireland. A couple of years later, we did a Canadian bit with them in Montreal and Quebec. He died a couple of years ago. I think he had a heart problem of some sort. I've kind of forgotten. But he was a good



friend and a lot of fun. We enjoyed him. We see his wife occasionally. She lives in Laguna--doesn't get up here; we don't get down there, but we telephone each other a number of times.

Well--more travel?

### Australia

Swent: Well, yes, and also, particularly, the Australian. You had said you had been Australia three times, but it would be interesting to know more about what you've done there. You have kind of a special connection there.

Curry: Well, Jim went over the first time for Utah [International, Inc.]. They had formed a division to satisfy the Aussies that the Americans could go there and work. This was called the Utah Development. They developed some of their coal mines, and Jim was involved in designing and building one of their towns out in the bush.

Swent: This is up in Queensland.

Curry: Yes, northern Queensland. It's about five hundred miles, I guess, from Brisbane. I went up there last year. We went up by plane and spent a day and a night. We had a big barbecue. There are two mines that are fairly close together--I think about twenty miles apart--with a central town for the married couples. They put on this big bash. The Australians, you know, like to drink a lot of beer, and they sure did. Jim travels over there about every other month. He spends a month here and a month there. His headquarters are in Melbourne, so we went to Melbourne, spent--I guess we were there for a couple of weeks. We went to Brisbane, saw the Exposition, flew up to the mine, and at that time we had Nancy's sister-in-law, Virginia, along with us, and we went from there up to Noosa Head, where Jim has a summer house on the beach. We spent about a week there. It's about sixty miles north of Brisbane. And Jim and Barbara were there most of that time, and then they had to leave. Virginia, Nancy, and I went up to Cairns and spent four or five days, went up to Port Douglas and got on the boat and went out to the Great Barrier Reef.

Swent: I was going to ask if you had seen that. It must be wonderful.

Curry: Well, Nancy didn't think so. She got a little seasick. It was fairly rough on the trip out, and it took about an hour and twenty minutes, something like that. When you got there, you just



anchored up to nothing--no land. There's a great big platform that is anchored to the reef, and I guess this tour boat held about a hundred and fifty people. Most of them went scuba diving and swimming around. They put on a big lunch, and then we got back on the boat and sailed home.

Swent: You didn't see anything really remarkable, then?

Curry: Well, we went down in one of these glass-bottom boats and saw a lot of the fish and the reef itself. But it wasn't a very clear day. It just didn't show up as it should have. So it wasn't all that great.

Swent: Did you ever get to Ayers Rock?

Curry: No, we never have. I guess that's another trip. [chuckles]

Swent: Another sight to see, I guess. Did you have any trouble understanding the Australians?

Curry: No. Well, some of them speak a lot faster than they should for gringos. We got around Brisbane a little bit by car, and Melbourne the same way.

Swent: Do they drive on the left?

Curry: Yes. They drive fairly conservatively. They're not like the French or the Italians who just--all they know is the gas pedal. It's surprising. The first trip we went to Italy, they were just coming out of the horse and buggy stage and onto these little two-wheel scooters, and they drove those around like crazy. Then they graduated to the little small Italian cars, and they drove those things like they had been driving all their lives. Later on, of course, they got into the bigger cars, and they drove those just as wildly.

### Italy

Curry: We enjoyed Italy. We saw Pompeii and Herculaneum and the Amalfi Drive. Paestum, that ancient Greek establishment that went out of business, I think, when malaria took over. It just finished it. There are some very impressive remains there.

Swent: You like history from these places, apparently.

Curry: I'm not much of a historian. I enjoyed seeing them, but I don't connect them with much of anything. We enjoyed northern Italy.

##

Swent: Where did you like the most to go? What's your favorite place?

Curry: Well, we enjoyed Garda a lot, and we enjoyed that Tyrolean country, the Dolomites, Bressanone, the Brenner Pass country. We got on a train, and we drove on the train and went through the Simplon Tunnel, which was quite an experience.

Swent: You put your car on the train, too?

Curry: We put the car on the train. We drove up to the loading area just as it was leaving with this gentleman waving us on as fast as he could. We actually did drive on that train while it was going, and it was just a string of empty flatcars with a little railing on each side about six inches high so you couldn't drive off. [chuckles] The train made a big S turn as it entered the tunnel, and I had to drive this thing over about six of these flatcars to get up to the head of it while it was going. The temptation to drive around these curves as the train was driving was pretty hard to handle. So, instead of being able to get out of the car and go up into the railroad car, which was ahead, we had to sit in the car the whole way through.

Swent: If you got there in time, you would get out of your car.

Curry: Get out of the car and go into this one rail car. But that was an interesting tunnel. It was driven many years ago by a bunch of hardboiled miners, I guess. I learned later that they used steam drills to drive this thing. It must have been just screamingly hot.

Swent: Did they go in from both sides?

Curry: Yes, they must have. The tunnel went uphill at a gentle grade for half the distance and then downhill. So it must have been a two-way job. It must have been quite a feat in those days to get that thing to meet in the middle. [chuckles]

Swent: And it starts from Switzerland and ends in Italy, is that right? Or is it France and Italy?

Curry: I think it's France, yes, and Italy.

Swent: So you had a bit of national rivalry there, probably.

Curry: There could have been. I remember the French adit was at a place called Brig, and that's right on the Rhone River. The road that we were on followed the Rhone down to Lake Geneva.

England and Scotland

Swent: Which country do you like the best?

Curry: I like England and Scotland. Of course, my background is Scottish, so I love to go back there and see that country. I think I've seen just about all of it.

We had an interesting time one time. We went over with Virginia and Nancy's brother, Dave, before he died, and met with young Johnny Jacob Astor III, or whatever his title was, who was doing some business with David. He took us to Hever Castle, where he grew up part of the time. That was where Ann Boleyn grew up as a child. It's a beautiful old castle. It's not quite as pretentious as a lot of them are, you know, but it was just a little jewel box. It's south of London. I can't think of a town it would be near, but it's in that beautiful Sussex country area.

We met Johnny there, and he kindly offered us the use of his hunting lodge up in Scotland, at a place called Tillypronie. [laughs] I couldn't hope to spell that for you without having to look it up.

Swent: Tillypronie?

Curry: Tillypronie, one word.

Swent: [chuckles] We'll guess at it.

Curry: Yes, we used to have a lot of fun up there.

Swent: Did you fish and shoot?

Curry: I don't, but that's what it was there for.

Swent: Have you played golf there in Scotland?

Curry: Well, I'm not much of a golfer, either, but we have been to St. Andrews, looked around. But Tillypronie was not too far from Aberdeen, and we drove over there. Put Virginia and Dave on a plane, and we carried on and went back up to Inverness and Nairn, out to Oban and the Isle of Mull.

Swent: Beautiful country.

Curry: It is nice. And that's the beauty of doing this thing on your own. You know, you're not tied down to a British Rail Pass or a tour.



Swent: Well, you've certainly done a lot of wonderful things.

Curry: Yes, we would like to do some more of it, but we're getting a little old for that sort of thing. I think I'd have a little trouble renting a car at my age. Some of them won't give you insurance, you know. But we haven't tried.

Swent: But you're happy to come back to Nevada City.

Curry: Yes, we have some friends up there that we've known for many years, and we always like to get together.

Swent: You've done a lot of your traveling with the Sherwins, then.

Curry: Well, not a lot, but a few trips, a couple of them. We were in Scotland with them once, and in--let's see--England.

Swent: You mentioned Australia, too.

Curry: Australia. That was after David died.

And we've seen the MacNamaras a time or two. We always enjoy traveling with other people. But then when we part company, why, it's always nice to be alone, too.

Swent: You haven't done the sort of thing where you're with a group of thirty-six?

Curry: No. Just on small city tours, things like that.

Swent: A different thing entirely.

Curry: Yes. We were on a tour in New Orleans with a group, and there was always somebody that seems to not quite fit in.

Swent: You have to wait for them. [chuckles]

You mentioned last fall that you were hoping to--I can't remember if you were just going or had just been on a tour to the Southeast? Your granddaughter had been in college?

Curry: Oh, that was sometime earlier. That was during President Reagan's first election. It was in the fall. She was at Duke [University], and we came home from England that time and stopped off in New York and flew to Washington--picked up a car there and drove down the Chesapeake and visited Jamestown and Williamsburg, and then to Raleigh and down to Kitty Hawk, where the Wright brothers did their playing around. So that must have been eight or nine years ago.



We were thinking this year of taking a Tauck tour and going down to Savannah and Charleston. But that didn't materialize. We got too busy.

Swent: Well, there was a storm, too.

Curry: That's right.

Swent: Hurricane Hugo.

Curry: When was that?

Swent: It was October, the first of October, late September.

Curry: Yes. Well, our planned trip was earlier. We wanted to get down there in the spring. But we got tied up with something else, and it didn't take place.

Swent: Well, maybe that will be your next one.

Curry: Hopefully.

#### David S. Curry

Curry: I haven't mentioned much about David. David wasn't the student that Jim was. In fact, his first year at the University of California at Davis, he made the "Dean's List." The dean called us and said, "You'd better get down here and straighten him out, or he's on probation." [chuckles] He was just having too much fun, I guess, in the dormitory.

But we got him into an apartment, and he settled down and graduated from Davis. He went into the ROTC program, too, and spent his time back at Fort Sheridan, out of Chicago. Fortunately, he didn't get sent to Vietnam. Then he came back and went to business school at USF and transferred to Berkeley. He finished up business there and went to work for Hewlett-Packard. He started out in Santa Rosa in personnel and got transferred down to Saratoga about a year and a half ago, in charge of their personnel for their computer division.

Since then, why, he's had to travel a bit. He went to Singapore earlier this spring and then was sent over to France and Switzerland about a month ago. That's when we had to go down there and babysit. He had enough bonus flying time so that he could take his wife. So they went together and enjoyed it immensely.

So we're very proud of both of them--nice boys.

Swent: You should be.

And David's inherited your personnel skills, then, hasn't he?

Curry: Well, he's probably done a little better. I was never involved too much in personnel work.

Swent: You've had a lot of dealings with people, though.

Curry: Yes, I've had to hire a few people and fire a few, and things like that.

Swent: That's a talent.

Curry: Well, I guess it is. I've run into people that I didn't think were very good at it. So it takes a little bit of know-how to get along with people. We had a labor union in Redding which we had to work with, and we never had any problem with them. I think that comes with dealing with people in the proper manner. Of course, sometimes you get a hold of people on the other side that are pretty hard to put up with. So it goes.

I think we've covered things pretty well.

Swent: I think so, Jim. Thank you very much for telling about your interesting career as metallurgist and cement plant manager.

## TAPE GUIDE -- James Curry, Sr.

Interview 1: October 24, 1989	1
tape 1, side A	1
tape 1, side B	11
tape 2, side A	19
tape 3, side A	38
tape 3, side B	49
Interview 2: December 15, 1989	58
tape 4, side A	58
tape 4, side B	67
tape 5, side A	75
tape 5, side B	83
tape 6, side A	93
tape 6, side B	102
Interview 3: June 13, 1990	110
tape 7, side A	110
tape 7, side B	119
tape 8, side A	128





# Raw Materials Handling by a Downhill Conveying System

BY JAMES T. CURRY

■ Two decades of steady growth in the Northwest portion of the United States, and the very rapid development of northern California, northern Nevada, and Oregon in particular, led Calaveras Cement Company—now the Calaveras Cement Division of The Flintkote Company—to Shasta County, Calif., in 1957.

The presence of a large deposit of high-calcium carbonate limestone had been recognized for many years, but it required the momentum of an expanding economy to make these long-known reserves valuable. This, plus the availability of a reliable supply of fuel in the form of natural gas, and the ready means of shipping the product to the consumer both by highway and railroad, seemed to offer the proper combination to launch a successful venture.

Calaveras had been manufacturing portland cement by the wet process since 1925 at San Andreas, Calif. Having started with two small kilns, the plant in Calaveras County embarked on an expansion program in 1945 that ultimately resulted in the plant as it exists today, consisting of five kilns with a combined production of 4.5 million bbl. annually.

The 1957 exploration program in Shasta County started with drilling and sampling of a portion of the McCloud limestone formation known locally as Gray Rocks. This deposit is located about 12 miles north of the city of Redding, the county seat of Shasta County, and about 100 miles south of the Oregon state line.

With ample reserves of high-grade limestone assured, the company purchased adjacent property for a processing plant and con-

tracted for the design and construction of a modern, fully automated dry-process cement plant with a production capacity of 1.5 million bbl. a year. Construction was started during the late fall of 1960 and before the end of 1961 the manufacture of cement had begun.

---

## Raw materials handling

---

In the early stages of quarry planning and plant design, it was readily apparent that some unusual procedures would be required to move material from the top of Gray Rocks to the plant.

A few of the existing conditions were:

(1) The elevation at the top of Gray Rock Peak was approximately 2,400' above sea level.

(2) The elevation of the plant site area was about 990' above sea level.

(3) The horizontal, straight-line distance between the quarry area and the plant location was roughly 6,600'.

(4) Bisecting the area between the limestone deposit and the processing plant was Interstate Highway #5, the main route from California to Oregon. During the planning stage this road was a four-lane, divided highway but engineers were working on plans

to convert it into a limited access expressway.

(5) Two minor frontage type roads adjacent to the main highway, both on Calaveras property, were to be considered in the eventual routing plan.

(6) Other items of consideration included existing power lines, pipe lines and telephone cables, both above and below ground.

Of the several alternate methods of surface transportation of quarry materials available, it soon became apparent that only two choices were worthy of serious consideration. They were: (1) conventional truck haulage down-grade to a primary crusher station in the plant area vs. (2) conveyor belt transportation in combination with a crusher at the quarry and some sort of a surge hopper ahead of the belt.

The plan that was finally adopted—that of a vertical shaft and

From Pit and Quarry, February 1970

tunnel combined with a conveyor belt delivering coarse, crushed limestone directly into the plant—promised to be more economical over the life of the project than truck haulage.

A belt system was designed to ultimately convey 600 tph. To duplicate its full-rated capacity with a fleet of trucks would have required a well-designed haulage road three miles long with a constant 8% grade to attain the desired vertical distance of 1,200'. In order to transport the necessary tonnage, a fleet of 12-15 trucks would be required.

There was some question at this time as to how to get across the future Interstate Highway #5 with trucks designed for off-highway duty. Of prime consideration, also, was the estimated cost of furnishing the necessary manpower to drive, service, and keep in top operating condition the number of trucks, including spares, to accomplish the job.

---

#### Vertical shaft specifications

---

At the mountain top quarry location, blasted rock is loaded by power shovel into 30-ton trucks for the short downgrade haul to the primary crusher building located at the 2,215' level.

At the primary crusher the rear-dump trucks unload into a 42" gyratory crusher driven by a 200-h.p., 720-r.p.m. motor, reducing rock from up to 40" in size to 5"

maximum size. Crushed limestone drops through a steel chute to the top of a raise, which is a 9' diameter shaft extending about 490' vertically downward from an elevation of 2,150'. The shaft serves as a 2,000-ton capacity storage hopper ahead of an apron feeder at the bottom.

The original concept of using the shaft as a combined surge and storage chamber was soon abandoned when it was discovered that crushed rock tumbling down the shaft was the cause of excessive wear on the sidewalls. The present mode of operation is to keep the shaft full at all times, and this is accomplished by withdrawing from the bottom at the same rate as material is introduced at the top.

This system of shaft control rendered unnecessary the three Gamma ray level detectors that had been installed in recessed chambers in the walls of the shaft. These gauges, employing Cesium-137 in safety-type holders, were spaced at intervals arranged to indicate the muck level in the shaft. The indicator near the bottom was interlocked with the apron feeder and would automatically stop the equipment to prevent the shaft from running empty.

---

#### Conveyor belt transportation

---

A feeder at the bottom of the shaft places limestone on the first

leg of the 36" belt conveyor system leading to the plant. A tunnel, approximately 720' long, 9' high and 10' wide, houses this first section of belt conveyor. The section of belt inside the tunnel is specially approved by the U. S. Bureau of Mines for use underground. The belt and hardware on this section is supported in place by conventional steel channels and posts.

The belt leveling the tunnel belt discharges to a second 36" belt conveyor which carries the rock down a distance of 4,200' from an elevation of 1,627' to 1,115'. This belt holds 188,000 lb. of material when loaded to capacity. To supply proper tension to the belt for head pulley, a take-up device with a 25-ton counterweight is provided.

While the average slope of this section of belt is about 12.1% there is one section 1,000' long at the high end that drops at 18.8% and another short section of 200' at 25%.

The long, downhill belt discharges to a third 36" belt with a necessary change in direction, passes under the two frontage roads and the main highway in corrugated metal tunnel sections and finally discharges into two covered steel storage tanks. This belt, driven by a 75 hp. motor, is 2,344' long. While this belt slopes downward to pass beneath three roads, it rises again at the discharge point to an elevation ap-

concluded on page 116



### Belt control and protection

The operation of the entire belt system is controlled by the primary crusher operator from his station high on top of Gray Rocks. A control panel permits him to start and stop all equipment, vary the speed of the apron feeder delivering rock from the bottom of the raise 500' below, and, through a system of varied color lights and audible signals, warns him of trouble developing along the belt line.

The operator is aided by a roving belt tender whose primary duty is clean up and lubrication. In the event of trouble along the belt line, this man can be reached by horn signal and telephone.

Numerous sensors and limit switches, speed and motion switches are mounted on each section of belt and indicate drift of belt, slippage, drive failure, belt failure, plugging at transfer points, etc. Belt piercing switches located at the transfer stations give indication of belts torn by reason of metal objects puncturing the belt at these points. Bin level indicators signal the height of material in the two storage bins at the plant and the operator can switch the flow of material from one bin to the other from his control panel. A stationary magnet and a tramp metal detector aid in keeping harmful metallic materials out of the system. An emergency hand-line stop switch runs the entire length of the belt. The belt system operates in an interlocked condition and the individual components can only be operated independently under conditions of test.

A very important operating feature of the long downhill belt is the braking system designed to hold the belt travel at a constant speed and to stop the belt under full load in case of power failure or trouble in the system downstream.

The 250 hp. 1,800 rpm motor equipped with a size 466 motor brake is required to start and run the belt until it acquires a load of material sufficient to overcome friction. At this point the regener-

ative braking system takes over maintaining a constant speed of 450 fpm while generating 226 hp. During operation, an electrically operated hydraulic system holds a pair of weight-operated drum brakes attached to the drive pulley in an open position. In the event of a power failure or an interlock trip, the hydraulic system ceases to function allowing the gravity-operated brakes to stop at a predetermined rate, thus preventing damage to the belt by abruptly bringing it to a stop under full load. As an emergency measure, the motor brake will set after the drive pulley drum brakes have expended their timed interval, and if a failure has developed in the conventional brake system, the motor brake will have a chance to stop the belt before any damage is done.

### Conveyor housing design

One of the most distinctive features of the conveying system is the unusual design of the housing. Cast of prestressed concrete in the shape of an inverted box U, each element is approximately 4' high, 5' wide, and 29' long. Each section weighs about 8 tons and is supported about 3' off the ground by concrete piers at the ends of the sections. The idlers and troughing roll supports are bolted to the side flanges of the precast sections which were cast with 12" diameter holes on the sides to provide access for inspection and maintenance at each troughing idler.

The conveyor elements offer ideal protection for the belt from the damaging effect of sunshine as well as providing cover for the belt and the material from wind and rain.

The concrete system cost considerably less than a conventional, steel-covered conveyor, and is almost maintenance free.

### Conclusion

At the present time, the belt conveyor system has been in operation for nearly eight years. It has experienced practically no mechanical problems and very few electrical problems. Belt wear has been negligible and with proper care of the system it is expected to operate successfully and efficiently for the life of the plant. ...





## INDEX--James T. Curry

- AIME (American Institute of Mining, Metallurgical, and Petroleum Engineers, 74, 101, 105  
 Alpha Hardware Store, Grass Valley, California, 29, 30  
 American Cyanamid Company, 30, 77, 78  
 Angove, Virgil, 85  
 Armstrong Business School, Berkeley, California, 5, 64  
 arsenic hazards, 17-19  
  
 Baker, Bob, 80  
 ball mills, 14, 30, 31, 72  
 Barker, Morgan, 34  
 Bechaud, Les, 84  
 Berger, Ed, 15  
 Blackburn, William, 3  
 Borax Company [Pacific Coast Borax Company], 3  
 Briggs, Bill, 30  
 Brown, Otto, 30, 77-78  
 Browns Valley Mill, 11-15, 71, 72  
 Butler, Cooley, 73  
  
 Calaveras Cement Company, 33-52, 88-115  
     claims, for acquiring land, 49-51, 90-92  
     conveying system, downhill, 104, 105  
 CALOSHA (California Occupational Safety and Health Administration), 100  
 Cassidy, Fred, 30  
 Cement, Lime and Gypsum Workers of America, 41, 89, 97  
 cement plants  
     English, 108, 109, 120, 121  
     Japanese, 108  
     Lone Star (Tijeras), 52, 109  
  
 Cherokee Mine, 81  
 Clarkson, Bob, 56, 57  
 Clinch, Downey, 30  
 Cuaione, Peru, 83-84  
 Curry, David, 33-34, 52, 55, 75, 118, 119, 131, 132  
 Curry, Nancy Sherwin, 3, 4, 10, 20, 43, 54, 55, 61, 66-68, 74-80, 118-129  
 Curry, James T., Sr.  
     Calaveras Cement Company, 33-53, 88-116  
     community activities, 46, 47, 52, 53, 77, 93, 109, 110  
     early years in Berkeley, 1-6, 58-64  
     Newmont Mining Corporation, 7-31, 65-87  
     travels to Australia, 55, 126, 127  
     travels to Europe, 118-122, 127-130  
 Curry, James, Jr., 20, 29, 33, 53, 55, 57, 74, 75, 117-119, 112-126  
 cyanidation of ores, 16, 19, 70  
  
 Depression, the, 65  
 Dillinger, Brower, 2  
  
 Empire Country Club, 74  
 Empire [Empire Star] Mine and mill, 7, 8, 10, 11, 16, 17-27, 67, 70, 73, 77, 87  
 environmental problems and regulations, 18-19, 38-41, 45, 46, 92, 96-114  
  
 filters, Oliver, 7, 8, 70, 71  
 Flintkote, 42-45, 97, 102, 103, 125  
 Fuller, Bill, 29

- George Brothers Foundry, Grass Valley, California, 30  
 Getchell Mill, Nevada, 17-22, 25-26, 40, 79-81  
 Golden Center Mine, California, 73  
 Grass Valley Sportsman's Club, 29
- Hooper, Frank, 10, 69, 70
- Idarado Mine, 81-83
- Joralemon, Peter, 79
- Kashatus, Joe, 85
- labor relations, 22-26, 41-43, 84, 89, 96-98  
 Larue, Alan, 86  
 Lava Cap Mine, 73  
 Lewis, Jack, 85  
 Lowe, Sherwin, 3
- MacNamara, Joe, 125  
 Mali gold mine, 124  
 Malozemoff, Plato, 56  
 Mann, Jack, 22  
 March, Harry, 75  
 McQuiston, Frank, 13, 21, 22, 26, 30, 57, 72, 77-82  
 Mein, William Wallace, Sr., 34, 43, 102  
 Mein, William Wallace, Jr., 34, 102  
 Metzger, Grant, 33, 34, 42, 50  
 mine safety, 69-72  
 mine workers  
   health and medical benefits, 16, 75-76  
   Mexican, 20-21  
   safety and health in the 1930s, 15-16, 71-72  
 Miner's Hospital, Grass Valley, California, 16, 75, 76  
 mines  
   in California  
     Browns Valley, 11-15, 71-72  
     Cherokee, 81  
     Empire (Empire Star), 10-11, 22-28, 67-71  
     Golden Center, 73  
     Grey Eagle, 81  
     Lava Cap, 73  
     Murchie, 7-9, 26, 65-67  
     North Star, 22-23  
     Zeibright, 26  
   in Colorado  
     Idarado, 81-83  
   in Nevada  
     Getchell, 17-22, 25-26, 40, 79-81  
 Mineworkers Protective League, 24  
 Murchie Mine, 7-15, 26, 65, 70
- Newmont Mining Corporation, 2, 3, 7-31, 57, 84  
 Newmont Exploration, 84  
 Nobs, Fred, 28, 56, 72, 73  
 North Star Mine, 22-23, 65, 70, 87, 125
- Oliver filters, 7-8, 70-71  
 Oroville dam, 112, 113  
 OSHA (Occupational Safety and Health Administration), 100  
 Oyung, George, 85
- Pacific Coast Borax Company, 3  
 Pardee Dam, 88  
 PG&E (Pacific Gas and Electric Company), 37, 40  
 Pit River dam, 93, 112  
 Portland Cement Association, 101
- Redding cement plant, 35-53, 90-116
- San Andreas cement plant, 33-36, 43-45, 88, 96, 97  
 Searls, Fred, Jr., 1-3, 9, 10, 59  
 Selby Smelter, 26, 73  
 Shasta County Air Pollution Control District, 38, 98-100  
 Shasta House, 43, 110

Sherwin, David, 31, 129  
Sherwin, John, 3  
Sherwin, Virginia, 31, 129  
Siemering, Bill, 41  
Smith, Francis Marion "Borax", 3  
Southern Peru Copper Corporation,  
57, 83, 84, 123  
Stauber, Art, 124-125  
Strohm, Charlie, 30

Tatman, Ken, 15, 81  
Telluride Mine, 81-83  
Toastmasters, 115, 116  
Tremoureaux, Roy, 30

Wagener, Parry, 31  
War Production Board order L-  
208, 22, 80, 81  
World War II, effect on mining,  
25

Zeibright mine, 26, 66





Eleanor Herz Swent

Born in Lead, South Dakota, where her father became chief metallurgist for the Homestake Mining Company. Her mother was a high school geology teacher before marriage.

Attended schools in Lead, South Dakota. Dana Hall School, and Wellesley College, Wellesley, Massachusetts. Phi Beta Kappa. M.A. in English, University of Denver. Assistant to the President, Elmira College, New York. Married to Langan Waterman Swent, mining engineer.

Since marriage has lived in Tayoltita, Durango, Mexico; Lead, South Dakota; Grants, New Mexico; Piedmont, California.

Teacher of English as a Second Language to adults in the Oakland, California public schools. Author of an independent oral history project, Newcomers to the East Bay, interviews with Asian refugees and immigrants. Oral historian for the Oakland Neighborhood History Project.

Interviewer, Regional Oral History Office since 1985, specializing in mining history.





















BANC MSS  
92/7116



